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THE CHOICE OF THE VARIOUS PREPARATIONS OF DIGITALIS.

BY H. A. HARE, M.D.,
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For many years members of the medical profession have been wont to regard the various pharmaceutical preparations of digitalis as possessed of a widely different physiological effect, far exceeding the variation naturally arising from the relative strength of an infusion as compared to a tincture. In other words, it has been generally conceded that no dose, large or small, of the infusion could be hit upon which would produce effects caused by any given dose of the tincture; or to express it still more clearly, it has been the general view that each of these preparations was capable of producing effects peculiar in some respects to itself. It has been supposed that this variation depends upon the relative proportions of the various active principles of digitalis held in solution by the water or alcohol with which the preparation is made, and if it be true that each preparation has an effect of its own it is also undoubtedly true that this is due to the reasons just suggested, as I am about to point out.

It will be recalled that digitalis contains at

least five principles, of which four are physiologically active and the fifth inactive. From these there may be developed other substances by chemical alterations or decomposition, but they probably are not primarily present. Each of these ingredients possesses a physiological action of its own, and each has a solubility of its own. Of the four active constituents, digitalin, digitoxin, and digitalein act upon the heart muscle, while digitonin has an entirely different effect, namely, the power of depressing the vagus nerves centrically and peripherally and the inhibitory ganglia in the heart. The digitalin here referred to is not the digitalin of amorphous form prepared according to the process of Homolle, nor the crystalline digitalin of Nativelle, neither of which is a pure digitalin, but it is the digitalin of Schmiedeberg.

The effect of Schmiedeberg's digitalin upon the heart is that of a powerful stimulant, for under its influence the individual heart-beats become more powerful (four to six times greater than normal) and it simultaneously causes a rise of blood pressure, first by increasing the strength of the heart, and second by stimulating the centric and peripheral vaso-motor apparatus.

The physiological effects of digitalein and digitoxin are identical with those of digitalin except that they do not stimulate the vasomotor center, nor the pneumogastric apparatus, and so do not directly raise blood-pressure or slow the heart. In other words they increase the force of ventricular contraction. The effect of digitonin being to depress the vagus nerves, it will be seen at once that it antagonizes the vagal effect of the digitalin on these fibers and so prevents digitalis from slowing the heart to the extent that would result from the use of digitalin alone. It also depresses the heart muscle. The proportion of digitonin in digitalis varies, but it is not present in sufficient amount to entirely overcome the inhibitory influence of the digitalin.

If we now turn to a consideration of the solubilities of these principles we can readily explain the different effects produced by the infusion and tincture or fluid extract. Digitonin is soluble in water, as is digitalein, but digitalin is only slightly soluble and digitoxin is scarcely soluble in water at all. As a result the use of the infusion in a case of heart disease would not give the patient the same degree of cardiac power as the use of the tincture, for not only would the most powerful stimulant of all to the heart, vasomotor system, and vagi be present in small amount, but in addition the large proportion of digitonin would antidote it.

On the other hand, digitonin is sparingly soluble in alcohol, while digitalin and digitalein are readily soluble in it, digitoxin being slightly so. It would seem therefore that in the presence of a failing heart and circulation the tincture or the fluid extract are the preparations greatly to be preferred to the infusion, because they contain large amounts of the active stimulant ingredients.

The reason that the infusion acts efficiently in some cases as a diuretic probably depends upon the fact that as it does not contain so much digitalin it is less apt to cause spasm of the renal vessels, but if the heart is feeble and there is renal stasis, the tincture is probably the better preparation to overcome this state, because it both aids the heart and by contracting the renal vessels overcomes the stasis. The use of digitalin is inadvisable unless we are sure that we get that made according to the process of Schmiedeberg, for the other digitalins usually sold are very uncertain. The infusion is far more apt to disorder the stomach than the fluid extract or tincture, because of the irritating digitonin.

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*MASTOID EMPYEMA WITHOUT THE USUAL OBJECTIVE SYMPTOMS.**

By S. MacCuen Smith, M.D.,
Clinical Professor of Otology, Jefferson Medical College; Surgeon in Charge Ear, Throat and Nose Department, Germantown Hospital, Philadelphia.

My object in presenting a paper on mastoid disease is not in any degree an attempt to treat the subject in an exhaustive manner, but chiefly to consider a variety of the disease not frequently encountered. Neither shall I burden you with any lengthy histories, but will briefly cite a few illustrative cases, and confine my remarks to the statement of such facts as seem necessary to elucidate the chief points of interest.

As this and other aural affections can not, from their clinical aspects, be recognized and treated strictly in accordance with prescribed rules, it would seem that a large clinical experience, together with mature judgment, and bold, yet conservative methods of treatment, will continue to characterize the future notable advances in *surgical otology*,

*A paper read before the Section of Laryngology, Rhinology and Otology of the American Medical Association, June, 1897.

just as similar methods have so largely contributed to the modern achievements of general surgery. It is quite true that certain well defined symptoms and appearances are commonly found in, and are somewhat diagnostic of, the usual form of mastoid disease. Nevertheless, when we consider the numerous exceptions to this rule, we are constrained to the belief that while general rules are of much value and applicable to most patients, yet their recognition and application in obscure cases is not only confusing, but positively misleading. For example, let us consider the large number of mastoid operations performed, when the only justifiable symptoms for such a procedure are swelling, redness and tenderness, or pain on pressure over the process; whereas these local manifestations were clearly secondary and incident to an existing circumscribed inflammation within the external auditory canal. On the other hand, because of the absence of such symptoms, an existing mastoid empyema may not be recognized or even suspected, although an examination of the external canal would have revealed distinct tumefaction or bulging of its postero-superior quadrant, a condition that is distinctly diagnostic of serious mastoid disease even when no previous tympanic inflammation has existed; and especially if accompanied by considerable head pain, tinnitus, and vertigo.

The temperature and pulse in these cases are often unreliable, although of considerable importance when associated with other definite symptoms. In one case that came under observation in which the ultra-conservative or expectant line of treatment had been followed (the only symptoms being head pains and otorrhea), little or no variation in either temperature or pulse was noticed until six hours preceding death, when it suddenly registered 108½°. The post-mortem revealed extensive necrosis of the mastoid and petrous portions of the temporal bone, all of which resulted from an acute suppurative otitis media.

I am not quite certain but that the symptoms to which I wish in particular to call your attention may only add one more to the already numerous doubtful diagnostic indications. The several patients who have done me the courtesy to present themselves this afternoon for your examination can in all probability establish what virtue there may be in this local manifestation much better than any explanation I might make.

Within a comparatively brief period it has fallen to my lot to see and operate upon some nine cases of mastoid empyema, in none of which were the usual mastoid symptoms present, but in all the pain (being intense in three) was confined to the *occipital* region, the chief point of intensity being situated immediately below and slightly anterior to the angle formed by the junction of the inferior curved line with the external occipital; or a line drawn one inch below the external occipital protuberance, and one inch anterior to its (the line) inferior extremity will indicate the point of election. In all of these cases the pain seemed to be unusually severe, and notwithstanding some aural suffering may have been experienced at the beginning of the attack, it promptly subsided in the ear and became constant and increasingly severe at the point designated. In this entire series of cases the *occipital pain* was of such commanding and urgent importance that other symptoms failed to attract the attention of either physician or patient. In each and every case opening the mastoid evacuated a quantity of pus more or less offensive, which in turn relieved the suffering, otorrhea, or other symptoms.

I will now ask your attention to the consideration of several rather typical cases illustrative of this unusual form of mastoid disease.

CASE I.—W. R. C., aged nine years, suffered from an attack of measles on February 1st, 1896, followed four days later by a severe pain in the left ear. At the end of one week a spontaneous rupture of the membrana tympani occurred, which, however, only gave slight relief. Three days later, notwithstanding the copious discharge, the pain grew worse. After some days of suffering Dr. E. E. Graham was consulted, who the following day requested an examination by the writer. We found an ample opening situated in the posterior inferior quadrant of the membrana tympani, through which escaped a free discharge. The pain, being intermittent in character, was not then referred to the ear or mastoid, but to the *occipital* region; neither was there redness or swelling over the mastoid, nor could pain be produced by pressure over the process, but possibly a "doubtful tenderness" was experienced on *deep* pressure over the antrum. There was an entire absence of tumefaction of the postero-superior wall of the external canal.

If in an acute suppurative otitis media pain persists after free drainage has been established, it must be due either to exten-

sive maceration of the mucous lining of the tympanum, or to a suppurative involvement of the mastoid, even if the usual external signs of mastoid empyema are absent. We can exclude the former if under favorable circumstances pain continues more than a few days (in this case it had extended over several weeks); whereas in the latter *continuous* suffering following an acute ear disease with active suppuration would only confirm the supposition of mastoid empyema, especially when there is added to this the presence of *occipital* pain, which we are almost prepared to believe diagnostic in such cases.

The mastoid was opened April 15, or about five weeks after the ear complications began. As soon as the antrum was reached a large quantity of pus escaped, the opening communicating freely with the external canal. After proper irrigation the wound was packed with iodoform gauze, which was renewed at stated intervals. From the very day of operation all suffering ceased. Three weeks later the mastoid wound had entirely healed, the discharge had ceased, and the hearing had resumed its normal condition, which improvement you will notice continues to-day, sixteen months after the date of operation.

Case II.—J. C. W., aged 39 years, received a punctured wound of left thumb in January, 1895, which at once became very painful. Two days later the glands of the left side of neck became painfully swollen; pus formations occurring two days later, at which time the same were evacuated. Six weeks later similar abscesses were opened, both on the neck and right leg. About ten days subsequently two additional abscesses were opened on the left leg and one on the left arm.

The general pyemia lasted about ten weeks, the patient being delirious a part of this time. One year after receiving the punctured wound he consulted the writer at the suggestion of his physician, Dr. A. H. Hulshizer. At this time his head pains continued to be severe, being confined to the left side, especially marked over the *occipital* region. Objectively the mastoid was utterly devoid of localizing symptoms, although marked hyperemia and bulging of the left membrana tympani were present. A free incision of the drum-head liberated considerable pus; the *occipital* pain, however, continued.

On March 19, 1896 (or about two months after consultation), we opened the mastoid. The cells were necrotic and well filled with thick brownish-yellow pus. As the antrum and attic were extensively involved in the necrotic changes, we continued the operation into the middle ear, establishing direct communication between the external auditory canal and the opening in the mastoid. The usual after-treatment was carried out. The patient was relieved of all suffering, and made a slow but uninterrupted recovery; his loss of hearing was quickly recovered, and to-day, you will observe, remains quite normal.

Case III.—Mr. M. A. J., aged twenty-eight years, contracted an attack of la grippe, in November, 1895. The usual febrile and catarrhal symptoms continued for about ten days, when the left ear became involved. The pain from the acute otitis media continued for five days, at which time the membrana tympani ruptured, relieving the pain only slightly. Under treatment this discharge ceased in two weeks, which, however, only served to increase the suffering. This cessation of discharge and continuation of pain lasted for about five weeks, when an acute recurrent otitis media developed, causing extreme suffering for two days, when the membrana tympani again ruptured, relieving the patient somewhat. The discharge from the ear and pain over the left side of head, especially severe over the *occipital* region, continued for one month longer, when he consulted Dr. J. C. Wilson, who in turn referred him to the writer on February 27, 1896. He did not show any of the usual symptoms of mastoid disease; not the slightest redness, swelling, nor tenderness on deep pressure; but the *occipital* pain was and had been a prominent symptom.

A large quantity of granulation tissue filled the tympanic cavity, and extended into the external canal for about one-eighth of an inch. This obstruction to free drainage was, we thought, quite sufficient to account for his suffering. On March 9, under general anesthesia, we removed from the tympanum this entire mass of inflammatory products, no ossicles being found. Some relief was obtained for three days, at which time the pain became quite as severe as ever. On March 16 (seven days later) we opened the mastoid with little or no difficulty, the bone having become very soft from extensive necrotic changes. The mastoid antrum communicated freely with the external canal, thus greatly facilitating the usual after-treatment of irrigation, etc. On account of the unusual necrotic changes, we made the opening into the mastoid permanent for a period of eight months, at which

time he had entirely recovered, except that the lost hearing was not regained. In this patient (as has been noted in several similar cases) the suffering was permanently relieved from the date of operation, the prompt cessation of the *occipital* pain being especially marked.

CASE IV.—R. A. M., aged forty-seven years, suffered from a severe attack of follicular tonsillitis in October, 1894. About one week later he developed a painful otitis media of left ear. He claims that the acute suffering continued to grow progressively worse for a period of two weeks, at which time he consulted Dr. Noell, of the Cooper Hospital, Camden, N. J., by whom he was referred to the writer at the Jefferson College Hospital. An examination showed moderate congestion of the inferior membrana tympani, the membrana flaccida being *intensely* inflamed. There was no bulging of any part of the membrane. The malleus could be distinctly outlined in its entirety. There was neither pain, swelling, nor redness over the mastoid. The suffering was referred chiefly to the *occiput* and left posterior side of the head. Not being able to account for his unusually severe suffering, we referred him to Dr. F. X. Dercum, who reported negative results from a neurologic point of view. The ophthalmic report was likewise negative.

For some time he had been treated in various ways for "neuralgia," but the administration of morphine alone gave relief; this being effective only while under its immediate influence. He was admitted to the hospital, and under general anesthesia we freely incised the inflamed membrana tympani, but did not find any fluid. His suffering was somewhat relieved for five days, when the *occipital* pain returned with increased vigor, the incised drum-head having healed in the meantime. On November 1st, 1894, we opened the mastoid, and were gratified to see a quantity of pus flow from the process. This evacuation of pus naturally relieved the suffering, and he made an uninterrupted recovery. Furthermore, his hearing is normal, in which condition it has continued for more than two years.

In conclusion we may add:

That the history of these cases reveals an entire absence of the *usual* objective symptoms attributed to mastoid empyema.

That redness, swelling and tenderness over the mastoid region are not necessarily diagnostic of deep mastoid disease, but are frequently secondary local manifestations of a furunculous inflammation of the external auditory canal.

That tumefaction or bulging of the posterosuperior quadrant of the external canal, especially when accompanied by otorrhea, is always diagnostic of mastoid empyema (even though all local manifestations are absent) and demands prompt surgical interference.

That a consideration of the pulse and temperature are necessary and of much value in some cases, while in others they are totally unreliable, even misleading and confusing.

That in otherwise more or less obscure cases the presence of *occipital pain* (as above detailed) is of commanding diagnostic importance.

THE TREATMENT OF LUPUS.

BY BALMANNO SQUIRE, M.B. LOND.,
Surgeon to the British Hospital for Diseases of the Skin, King's Cross, London.

The author describes a new mode of treating lupus. This is an endeavor to improve on the methods devised by Professor Volkmann of Halle for the treatment of this disease. Volkmann's methods were of two kinds: the one was the scraping out of the soft and friable new formation by means of comparatively sharp spoons; the other was the execution of a multiplicity of closely placed but shallow punctures, made with the point of a lancet, this latter process being designed for the treatment of such portions of the diseased area as are not sufficiently soft and friable to yield readily to scraping. Mr. Squire states that these methods, although always leading to rapid and considerable temporary improvement, never induce a complete arrest of the progress of the disease. After reviewing various other methods of treatment, such as excision, the actual cautery, the thermo-cautery, chemical caustics, and the various modifications of puncturation, and explaining what he regards as prohibitive disadvantages in the case of each of these, he assigns reasons for objecting also to the administration of either chloroform or ether in operating on lupus. He accordingly avails himself of local anesthesia, namely, by freezing the affected area by means of Richardson's apparatus. This preliminary is indeed an essential condition, in more ways than one, of the method which Mr. Squire has devised, since for the performance of his operation a glacial state of the affected area is indispensable. In this state, as he finds, the skin can be carved, or as he expresses it "sculped," with the same

ease as if it were moderately hardened putty, and the diseased structure can thus be brought away in solid chips. For executing the "sculping" he uses a modification of Volkmann's steel spoons, that is to say, spoons of about one-fourth the size of Volkmann's and having much sharper edges. In the glacial state, sound skin and diseased skin comes away with equal facility under the action of these spoons. Accordingly Mr. Squire finds himself able by means of them to remove not only the soft and friable tissue which alone comes away under the customary method of scraping as devised by Volkmann, but also the whole of such tougher portions of skin as are in a less degree affected with lupus. But not only is he able thus to remove the whole of the area which may be in any degree diseased, but also a zone of apparently perfectly healthy skin. The last he considers it specially necessary to remove since he holds that the real limits of a lupus patch extend for some little distance beyond its visible limits.

He claims for his operation not only that it is more thorough, but also that much more precision can be imparted to it than is possible in the operation of "scraping." He describes his operation as a "specially conservative excision of lupus, executed not with a knife but with a curette, and performed under conditions which permit of more than customary precision." A necessary feature of this method is that the limits of the patch to be "sculped" must be previously carefully marked out with a black line drawn round it on the skin. This is requisite because when the skin is frozen the lupus-patch and the skin around it are alike of a uniform dull white color, so that all trace of the margin of the patch disappears for the time being.

Mr. Squire draws attention to the fact that the operation he has devised is essentially different from Volkmann's operation (scraping) not only in detail but in scope. He claims other advantages than those above referred to as incidental to operating on skin in the glacial state. One of these is that not a single drop of blood escapes to embarrass the operator; this he regards as an important factor in an operation which, from his point of view, demands considerable precision for the attainment of a successful issue. Another is that in the glacial state the skin is absolutely rigid. In Mr. Squire's view this circumstance is a notable additional aid to the attainment of precision. In the operation of scraping, as ordinarily performed, an embarrassment arises from the ready yielding of the skin in whatever direction the curette may at the moment be pressed. "The considerable elasticity of the skin and its loose attachment to subjacent structures renders the 'scraping' of a lupus-patch as ordinarily performed a very imperfect procedure; whereas the frozen skin around the frozen patch fixes the patch all round as firmly as a drum fixes a drum head. Another advantage claimed is that the frozen skin does not clog the curette."

After thus thoroughly carving out from the frozen skin all of the diseased structure so far as ascertainable, Mr. Squire "still further safeguards" the efficacy of his operation by "linearly scarifying" the floor and margin of the sculped-out area at a subsequent sitting by means of his "multiple linear scarifier." This is an instrument composed of sixteen parallel scalpel-blades fixed on one handle, the cutting edge of each blade being separated from that of its neighbor by an interval of only a thirty-second of an inch. For this operation the area is again frozen as before. He says: "By such means I have succeeded in completely healing very many cases of lupus, in such wise that the patients have remained absolutely free from the disease for a series of years." In conclusion he desires to say that he has acquired practical experience of a great many modes of treating lupus, but no method that he has tried has yielded him results so good as the one he has here described.

THE TREATMENT OF HEMORRHOIDS BY THE INJECTION METHOD.

By Lewis H. Adler, Jr., M.D.,
Professor of Diseases of the Rectum, Philadelphia Polyclinic and College for Graduates in Medicine; Surgeon to the Charity Hospital, and to the Out-patient Department of the Episcopal Hospital; Prosector to the Professor of Anatomy, Medical Department University of Pennsylvania, Philadelphia, Penn.

I am sure that my experience in rectal work is by no means unique, in that the majority of patients with hemorrhoidal troubles come to me greatly prejudiced against any operative procedure involving the employment of general anesthesia, and especially the use of the knife. These objections have been raised not only by the laity but also by physicians who have been similarly affected. Such an argument should not and would not prove a factor in altering the character of

advice to be given to a patient were I satisfied that only one plan of treatment could effect a cure; but where a choice exists of several methods of effecting the same or similar results, it is not only our duty but a necessity for us to respect the patient's wishes.

In a number of instances, sufficient to convince me of the efficiency of the method and to enable me to place my opinion on record, I have treated internal hemorrhoids (in selected cases only) by the injection of carbolic acid. The results obtained in every instance have been eminently satisfactory to patient and myself alike.

I am thoroughly acquainted with the unsatisfactory experiences and the unfavorable opinions expressed regarding this treatment by such authorities as Kelsey of New York, Mathews of Louisville, Ky., Allingham of London, and others of equal eminence, and I am furthermore free to confess that for a long time the weight of this testimony deterred me from giving the method a trial. On the other hand, I have diligently perused the literature, past and present, dealing with the other phase of the question, and after reading the excellent treatise on "Hemorrhoids and other Non-malignant Diseases of the Rectum" by W. D. Agnew, M.D., of San Francisco, California, I determined to test the merits of the treatment.

External Hemorrhoids.—Agnew* admits that the quickest, neatest, least painful and most desirable way of disposing of any form of external hemorrhoid, cutaneous tag, or like redundant tissue is by excision, but employs the carbolic acid injection in those cases in which the patient is averse to being treated by any plan involving the use of the knife or scissors. He claims that this method effects a cure, to which such persons will readily submit, although informed that a longer time is required for the complete eradication of a tumor thus treated, and that more pain and inconvenience may be experienced from the effects of the operation than would result from that by excision. Personally, I have had no experience with this method of treating external hemorrhoids, preferring and always advising in operative cases the excision of such tumors.

According to the same authority† and as the result of his observations, the objections to the treatment of external hemorrhoids by carbolic acid injection pertain solely to the length of time required for the removal of the tumor—a period of three or four days—and the pain following the injection, which is not intense, but is at times more or less annoying, usually beginning within one or two hours after the operation, and continuing for twelve or fourteen. Agnew advises against the employment of this method in the treatment of external hemorrhoids when inflamed and in a highly sensitive state. He especially notes the care that should be taken when operating on these tumors by injection, to see that quite a considerable portion of the cutaneous surface, especially at the summit of the pile, is affected by the solution applied just beneath the skin; otherwise the skin will become inflamed in order to let out the interior coagulum, which he has often seen come out in three days without suppuration or showing the appearance of much moisture, and in one unbroken cystic-looking mass. The operation is to be performed with a view of cauterizing all of the tissue to be removed, which can be governed only by the dictates of judgment and as a result of experience.

Internal Hemorrhoids.—It is to the treatment of internal hemorrhoids by the injection of carbolic acid that I wish especially to invite your attention, in the hope of eliciting a free discussion as to its merits or demerits based upon the actual experiences of those who have given the method a fair trial.

Formula.—The formula which I use is the one advocated by Agnew, and the method of its preparation is best detailed by a *verbatim* description as given in Dr. Agnew's work on Diseases of the Rectum.*

"The solution of carbolic acid found to be uniformly successful in the treatment of hemorrhoids is prepared by first making a solution of the acetate of lead and borax in glycerin, in the proportion of two drachms each of the chemically pure salts to one ounce of Price's glycerin.

℞ Plumbi acetat.,
Sodii biborat., āā ʒ ij;
Glycerinæ, f ʒ j.

Mix in a graduate, pour into a two-ounce vial, and let it stand for twenty-four hours.

"The solution of the salts is hastened by placing the vial in a warm-water bath and allowing it to remain there for fifteen or twenty minutes. The glycerin can be handled to a better advantage, and its measurements

* *Op. citato*, p. 18.
† *Op. citato*, pp. 22-23-24.

* *Op. citato*, pp. 35 and 36.

more accurately made and retained by warming it as well as the graduate before it has been poured into the graduate and the chemicals have been added.

"Select Calvert's No. 1 crystallized carbolic acid and pour a sufficient quantity, liquefied by warmth, into a two ounce graduate to measure one ounce, and add two drachms of distilled water. To this add enough of the glyceride of lead and borax previously made to make the combination measure exactly two ounces.

℞ Acidi carbolic (cryst.), ʒj;
Aquæ distillat., f ʒij;
Sodii biborat. et plumbi acetat. et glycerin, f ʒvj.
Misce et sig.: Solution for hemorrhoids.

"The object of the water in the formula is to lessen the syrup-like consistency of the preparation. Should equal parts of crystallized carbolic acid and the glyceride of lead and borax be combined, the solution will be found rather too heavy for convenience. It will not flow through the hemorrhoidal needle as freely, nor take hold of the tissues when injected as quickly, as does a solution containing a small proportion of water.

"Be particular in the weights and measurements, and the purity of the ingredients entering into this preparation, as anything unnecessarily irritating should be scrupulously avoided. I have tried synthetic carbolic acid and found the odor of tar to be decidedly stronger, and believe it much more acrid and irritating than the commoner preparations; neither can I see that anything is gained in using vegetable glycerin.

"Some make no allowance, in attempting to give the formula, for the increase in bulk of the glycerin occasioned by the addition of the one-half ounce of solids, and direct that the ounce of carbolic acid be added to the full amount of the glyceride of lead and borax when made. By this inadvertence not much over a thirty-five per cent. solution of carbolic acid is obtained. After trying the acid in varying strengths and watching its effects, I have concluded that not less than a fifty per cent. solution should be used. The addition to the solution of the acetate of lead is designed to restrict the action, and that of the borax to lessen the irritative properties of the acid. The acetate of lead not only keeps within limit the distribution of the acid at the time the solution is forced out of the hypodermic syringe, but of itself combines with a certain portion of the albumen of the blood and other tissues, forming the albuminate of lead. If I were to make a change in the formula it would be toward an increase rather than a diminution of the quantity of acid."

Preparatory Treatment.—This includes a careful study of the patient's physical condition. I would advise against the employment of the injection treatment in cases predisposed to phthisis, or already affected by this disease, and in diabetes or in chronic diseases of the liver, heart, or kidneys.

During an acute inflammatory attack of hemorrhoids is not a favorable time to operate, on account of the engorged condition of the rectal vessels and the irritability of the mucous membrane of the bowel. Such conditions should be relieved by local medication and by remedies directed towards regulating the bowels and increasing the activity of the liver.

Operation.—At the time of the operation the hemorrhoids are exposed by inducing the patient to have a stool or to sit over hot water.

It is advisable to smear vaselin over the muco-cutaneous surfaces prior to operating, as advised by Agnew,* in order to prevent the solution used for the injection coming in contact with the parts.

The patient should be placed in Sim's position, and the hemorrhoid being sufficiently well exposed it is to be punctured at its most accessible point, preferably about midway between its base and apex, and the point of the needle passed to about the center of the growth. Care must be exercised that the needle's point is inserted beyond the proximal end of its opening, as otherwise the preparation will be injected on the outside of the tumor. In a large growth eight or ten punctures may be found necessary.

The injection is to be inserted slowly, several drops at first, then drop by drop, watching the action of the solution as shown by the change of color that creeps over the surface of the pile. This change of color Agnew states is quite marked with hemorrhoids of a delicate covering, less so with those possessed of more fibrous coats. The needle should be held in position for a short time, and if the quantity injected appears to be less than needed, more of the solution should be used. Agnew states that the solution takes effect slowly by virtue of its astringency and syrup-like consistency, and no doubt extends farther than is always apparent at the time of operating. If the hemorrhoid be large, and its cavities filled with blood exhibiting strong

*Op. citato, p. 34.

arterial pressure, more time will be occupied in performing the operation than is generally supposed, as many as twenty or thirty minutes occasionally being required. The time is taken up in such cases by holding the needle in place until assured that sufficient of the solution has been used to effect the desired result. If the part feels doughy or springs up under the finger like an elastic ball when pressed, or blood flows freely through the place of puncture after the needle has been withdrawn, either enough time has not been allowed for the preparation to take full effect, or a sufficient quantity has not been injected.

After the entire cavity of the tumor has been thoroughly reached by the injection, and in a large tumor a few drops have been deposited on the surface of the pile so as to be sure of thoroughly cauterizing the more dense tissue of its integument—which Agnew states might otherwise inflame, creating unnecessary pain and suffering—the hemorrhoid is to be thoroughly dried, covered with carbolized vaseline, and returned within the bowel. Several tumors may be treated in this manner at one operation, and I have seen no bad results ensue, although I have used several drachms of the solution in a single treatment.

No speculum is required as a rule in this method of treating hemorrhoids.

The needle required for the hypodermic syringe employed in giving these injections should have a little larger bore than the needle employed for ordinary hypodermic use, so as to permit the fluid to flow through readily, which the smaller needle prevents, owing to the consistency of the injection fluid.

After Effects and Treatment Following Operation.—In some cases pain is experienced several hours after the operation, but is usually controlled by suppositories of the aqueous extract of opium, one-quarter of a grain, and the extract of belladonna, one-eighth of a grain, used *pro re nata*. Difficulty in urinating may occur, and is usually relieved by a hot-water bag applied above the pubes, or by a sitz bath. Catheterization is seldom required. A desire to have the bowels moved can be allayed by the suppositories and by hot-water compresses applied to the anus.

I do not endeavor to confine the bowels for any definite period after this operation; usually the patient's fear of having a movement effectually restrains such a desire, and on the third day I am in the habit of ordering administered fractional doses of calomel and soda followed by a saline. Just preceding the time the bowels act I order given a rectal injection of eight ounces of carbolized oil (two per cent. carbolic acid) or an injection of slippery elm tea or of borax water (a dessertspoonful of borax to the pint of water).

A peculiar odor, sometimes noted when the coagulum is being thrown off, should not be interpreted as indicating suppuration.

Agnew states that to effect a safe, speedy, and radical cure of a case of hemorrhoids it is desirable to get rid of the tumor bodily, not by shrinkage or contraction, leaving a hard or indurated prominence, subject to resuscitation and a return of the old malady, nor by inflammatory destruction, but by a separation of the spongy and vascular growth from the normal tissue of the body, the same as if it were dissected from its remotest attachments. This is obtained by putting a sufficient quantity of the preparation recommended just where it is required and such results will invariably follow.

My experience with the treatment thus far leads me to endorse most heartily Dr. Agnew's strong commendation of the method which he has so successfully employed for a long time.

Personally, I cannot speak authoritatively regarding the permanency of the cure effected by the carbolic acid injection of hemorrhoids, for I have not had an opportunity of observing cases treated by this method for a longer period than two years, but from my observations I am inclined to believe that it is a radical procedure.

Regarding the dangerous results following this treatment—of carbolic acid poisoning, embolism, sloughing and ulceration, or their sequelæ, abscesses or fistulæ—I have not witnessed any such results, and am loath to believe that they do occur if the operation be performed carefully and skillfully and with a proper observance of aseptic principles.

1610 Arch Street.

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*REPORT OF TWO CASES OF TUBERCULAR KIDNEY.**

By Milton J. Lichty, M.D.,
Alliance, Ohio.

Case I.—Mr. F. C., aged sixty-eight, was admitted to the Allegheny General Hospital June, 1896, and placed under the treatment

* Read before the Stark County Medical Institute, Ohio.

of Dr. Joseph C. Ohail, visiting physician to the hospital.

For many years he had enjoyed the best of health, though he was a hard laborer, exposed to all conditions of weather. During the last five years he had several attacks of rheumatism and bronchitis, and two years ago he first noticed a constant pain over the kidneys and in the abdomen about the umbilical and epigastric regions. At the same time micturitions became gradually more frequent and difficult. Six months ago he was obliged to quit work. The physical signs were those of a mild anemia, with an average hemoglobin of sixty per cent. and corpuscles 3,500,000. The lungs were apparently normal, heart slightly enlarged, vessels soft and compressible. Pressure over abdomen elicited great tenderness, and deep pressure revealed a slight nodule above the umbilicus. The urine was alkaline, containing phosphates and epithelial cells (no albumen, no casts, and no sugar).

Continued distress after meals, much pyrosis and several emeses, suggested an examination of gastric contents. After a test meal no hydrochloric acid was found, the absence of which indicated carcinoma of the stomach. The patient was chloroformed and a hard immovable tumor about the size of an egg, with smaller nodules surrounding it, was found to the right and above the umbilicus. Liver dulness and tumor dulness were inseparable. The position of the tumor was noted and after the patient had fully recovered from the anesthetic the stomach was expanded with gas, when it was found that the greater curvature of the stomach did not extend as low as the tumor, thus excluding involvement of the stomach.

The rectum and colon were then expanded with air, when it was found that a tympanic note followed the transverse colon separating hepatic and tumor dulness. From these observations it seemed apparent that the tumor was free from the stomach, liver and transverse colon, that it was retroperitoneal, and probably a cancer involving the glands of the mesentery. The lumbar pain was supposed to be a referred pain from the tumor, and the frequent micturition supposed to be caused by a cystitis from a retention of urine by a slightly enlarged prostate gland. A fatal prognosis was given and the patient put upon a purely palliative treatment.

Two months after admission it became necessary to use the catheter twice daily. Then pus and albumen suddenly became abundant. The patient gradually grew weaker and died August 11, 1896.

At the autopsy the prostate was found enlarged, the abdominal tumor involved the mesentery and was composed of numerous nodules, many of which were suppurating. The kidneys were both enlarged to about three times the normal size and contained many dilated ducts and tubules filled with pus and plates of crystallized material. Miliary tubercles were found over the entire surface of the kidneys and over portions of the lungs. Microscopical sections show cheesy necrosis of the kidneys, and the tumor, instead of being a cancer, was a tubercular tumor also.

Though the case at first seemed like a cancer of the mesentery, it is fairly evident (from the late appearance of the pus and albumen in the urine) that the sudden suppuration of the kidney was due to a secondary infection from the tubercular glands of the mesentery. The urine, unfortunately, had not at any time been examined for tubercle bacilli.

CASE II.—Mr. J. T. L., age thirty-six, laborer, came under my care December 1, 1896, with the history of scarlet fever at four years of age, a severe attack of measles at twenty, and repeated attacks of malaria until he sought a change of climate. During the last eight years he had had several attacks of influenza followed by chronic bronchitis. One year ago he first noticed pain in the back and on the right side, which has been constant since. There was a loss of appetite and weight attended with repeated irregular chills. Micturition was frequent and painful, followed by much tenesmus. The face was swollen; heart and lungs were apparently normal. An examination of the sputum was negative. The abdomen was rigid, with considerable pain over the stomach and liver, which was very much enlarged. Liver dulness extending three inches below the costal margin. Sounds were passed, revealing an absence of urethral stricture and stone in the bladder. The urine was 1018 in specific gravity, acid, with an abundance of pus and other sediments. Albumen was present in considerable amount even when the microscope showed an elimination of the pus after repeated filtrations. A diagnosis was made of chronic Bright's disease with an associated cystitis. The liver was supposed to be enlarged from amyloid condition of cancer; enlargement from a possible chronic malaria indicated by his frequent irregular chills was excluded by repeated ex-

aminations of the blood, which seemed free from the malarial plasmodium.

The treatment consisted of rest in bed, liquid diet, mild diuretics and tonics. With this regimen some of the symptoms improved for about one month, though the anemia increased. The pus and albumen diminished considerably and micturition was less frequent and painful. Repeated search was made for casts, with constantly negative results. I then made an examination for bacteria in the urine and found many tubercle bacilli, which, according to Strumpell, "are an infallible and absolutely decisive sign" of tuberculosis of the kidney. The patient rapidly declined and died in January, 1897, after seven weeks observation.

At the post mortem examination I found an enlarged amyloid liver. Numerous abscesses perforated the capsule of the right kidney, which was about three times the normal size, with many miliary tubercles. Microscopical sections showed a marked and advanced cheesy necrosis. This then was apparently a case of primary tuberculosis of the kidney in which perhaps fatal termination might have been delayed by an early operation, either nephrotomy or nephrectomy, which according to statistics from Ashhurst is successful in about 60 per cent. of cases.

Though the actual condition discovered so late in both these cases might not have been improved in either by any kind of treatment whatever, at the same time they clearly indicate to me the importance of an early examination of the urine for tubercle bacilli. Tubercular kidney covers perhaps from 3 to 5 per cent. of all the affections of the kidney, and is no doubt often mistaken for simple nephritis.

SUCCESSFUL REMOVAL OF A CYSTIC ABDOMINAL TUMOR FROM A CHILD AGED SEVEN MONTHS.

CAMPBELL, in the *British Medical Journal* for May 15, 1897, details the case of a child coming under his care with the following condition: The labor was difficult, forceps being applied high up. The child throve well, and was apparently healthy at the age of three months, but about a month later the mother noticed swelling of the abdomen, which gradually increased. Periodical attacks of violent colicky pain occurred.

When it came under the reporter's observation the general nutrition was good. The respirations were shallow and embarrassed. The abdomen was greatly distended by a lobulated tumor, which was more prominent on the left side, and felt hard in its upper half, but soft and fluctuating below. There was dulness on percussion all over the abdomen except in the right hypochondriac region, which was resonant.

On July 10, two days after first examination, it was chloroformed and a median incision made from midway between the ensiform process and navel to midway between the navel and symphysis pubis. This exposed a large tumor lying behind the posterior parietal peritoneum and pushing the intestines into the right hypochondrium. The cystic portion having been tapped, the whole mass was enucleated from the subperitoneal tissue. No bleeding of consequence occurred, and no ligatures were required. The tumor had no pedicle, but was firmly attached deep in the left side of the pelvis. It lay in front of the left kidney, which was situated at the level of the iliac crest, and was freely movable. The peritoneal covering of the tumor was attached to the edges of the lower end of the abdominal wound, and the cavity was packed with gauze. The upper end of the wound was closed by two layers of sutures, silk being used for the peritoneum and silkworm gut for the skin and aponeurosis. The operation was well borne, except for a few seconds during the extraction of the tumor, when the pulse became bad, apparently owing to pressure on the cardiac area of the diaphragm.

Two hours after operation the child took milk and barley-water, and afterwards fed regularly every two hours. Fifteen minim doses of whiskey were given every half hour for the first three hours. The child slept well. She vomited slightly on one occasion only. On the sixth day the gauze packing was removed, and the bowels acted spontaneously. On the eleventh day the silkworm-gut stitches were removed. Recovery without interruption.

The tumor was composed of a cyst containing about ten ounces of clear yellow fluid, and of a solid portion, in which a mass of cartilage and a piece of bone lay embedded. It weighed three pounds when fresh. There was nothing to indicate the organ from which it originated.

This appears to be the youngest child from which a cystic abdominal tumor has ever been successfully removed. The only case which approached it in point of youth is that operated on by Roehmer, of Berlin, in 1883, at the age of twenty months. The present case is therefore thirteen months younger than the Berlin one.

The Therapeutic Gazette

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Leading Articles.

NON-MEDICINAL METHODS IN THE TREATMENT OF DISEASES OF THE HEART.

The so-called Schott method of treatment of heart disease consists in large part of passive movements of the limbs of the patient and in certain cases a resort to moderate and graded exercises. As carried out at Nauheim it possesses the additional advantages that the patient gives himself up entirely to his cure, and nothing is left undone which can aid the special movements and the baths in improving the nutrition of the tissues and the condition of the peripheral circulation. At first sight this recently advocated, but by no means entirely new, method which Schott has urged has been cited as an example of the fact that the treatment of heart disease by rest is not so important as some of the profession have been led to believe, and it has been thought by some that rest as compared to this newer treatment by exercise is by no means so valuable a remedial measure as we have thought.

We believe, on the other hand, that the so-called Schott treatment of cardiac disease is necessarily limited to a very much smaller class of patients than is the treatment by rest, and we see nothing contradictory in the application of these two non-medicinal measures for the treatment of cardiac lesions.

On the contrary, we think that the results which have been obtained by advocates of the method forcibly illustrate the fact, so well recognized by all therapeutists, that all cases cannot be benefited by the same treatment and that what benefits one may actually do harm to another. Nor is there any contradiction in these two methods, for the Swedish movements do not in any way necessarily impair the rest which the heart of the patient may receive by means of his personal inactivity. On the contrary the work of the heart, even with the resistance movements which are practiced in the methods of Schott, is not very materially increased, while on the other hand a large amount of labor is taken away from the heart by the fact that the muscular contractions so improve the circulation in the various lymph spaces of the body that the heart is considerably aided, and instead of its being the only organ employed in causing a circulation of fluids in the tissues of the muscles of the body, there are other aids in propelling blood and in forcing it along in the lymph paths. As a result of this the peripheral portions of the body are not continually irritating the heart by calls for more blood, neither do they become congested with stagnant and over-used fluid. The general nutrition of the entire body is improved, and simultaneously with this improvement comes a change in the nutrition of the heart.

The moral seems to be that while nearly all cases of cardiac disease with ruptured compensation require rest, many cases in order that their general health may be improved require at the same time a certain amount of muscular movement. A practical application of this idea is already familiar to the profession in carrying out the rest-cure, in which, as is well known, the patient is placed in bed, prevented from making any exertion, but his or her circulation and nutritive processes are maintained by massage in the morning and electrical stimulation in the afternoon, not to speak of the bath and the cutaneous rubbing with a towel which is resorted to while the patient lies prone on a blanket, every morning. Unless these measures are carried out in addition to the rest it

is evident that all the benefits from the so-called rest treatment of cardiac disease cannot be obtained. In a recent number of the *Medical Record* Dr. Beverley Robinson of New York discusses not only the rest-treatment of cardiac disease and that which has been recommended by Schott, but he also dwells upon the advantages and disadvantages of the method instituted by Oertel, a method which had the design of improving the general circulation by more or less active muscular exercise taken by the patient, as a rule in the form of mountain-climbing. We understand that in Europe at least Oertel's method has greatly decreased in popularity because its technique was excessively rigorous, and the reason that the resistance movements of Schott seem to do more good, and to be more popular, seems to lie largely in the fact that they accomplish the same result without producing any degree of exhaustion of the heart or general nervous and muscular systems.

THE USE OF ANTISTREPTOCOCCIC SERUM IN THE TREATMENT OF VARIOUS FORMS OF SEPTICEMIA.

The very interesting studies which have been made during the last few years in regard to immunity, and our ability to produce it in animals and in human beings, has resulted, first and foremost, in the employment of diphtheria antitoxin for the protection of persons who are infected by the Klebs-Loeffler bacillus, and the extraordinary results which have been obtained by the use of this serum in the treatment of this disease have placed its use upon as firm a basis as that upon which any therapeutic measure can rest.

Naturally experimenters and clinicians have gone further than this and have attempted to use other serums prepared in ways identical with or only slightly different from the methods employed in the preparation of diphtheria antitoxin, for the protection of individuals suffering from an infection with other malignant germs than those of diphtheria. One of the most noteworthy attempts of this character has been the employment of the so-called antistreptococcic serum, or the serum obtained from animals supposed to be rendered immune to the streptococcus, in persons who are suffering from septicemia following injuries, surgical operations, or parturition. While the scientific information upon which this treatment is based amply justifies the employment of antistreptococcic serum and other serums destined for similar purposes, it is an unfortunate fact that the results which have been obtained by its employment so far have not been such as to give us the encouragement which the early studies with regard to diphtheria antitoxin gave us. Medical literature, particularly in England and in Europe, has teemed during the last few months with isolated reports of cases of septicemia treated by this means, and some clinicians have even gone further and employed this serum in the treatment of such a disease as scarlet fever, in which, in addition to a specific infection, it seems probable that grave streptococcic infection also occurs. It is worthy of note, too, that in the treatment of scarlet fever results have been obtained which would certainly justify the experimenters in continuing the trial of this substance, although they have hardly been sufficiently numerous or so universally successful as to justify the average American physician in following in their pathway. Perhaps the most notable contribution which has been made in American medical literature to the study of this question is a series of papers recently communicated to the Section on Gynecology of the College of Physicians of Philadelphia by Hirst, Norris, Shoemaker, Davis, Baldy and Shober. These papers combined are so exhaustive that it is not possible for us to give more than a summary of the views of their individual authors. Dr. Hirst from his experience in the employment of antistreptococcic serum in puerperal sepsis believes we are not in a position to pronounce any judgment on this new treatment; that we should not be so prejudiced against it as not to give it a thorough clinical test, and on the other hand should not be too enthusiastic concerning it. As he well points out, the following forcible objections can be urged against this method of treatment: First, the well tried, older plans of treatment will result in the cure of about four-fifths of the cases. If, therefore, the serum is employed along with other suitable treatment, four out of five cases will be cured in all probability, and some of these cures may be erroneously attributed to the serum. Next, he points out the difficuity of obtaining a thoroughly reliable preparation, which difficulty has been largely obviated within the last few weeks by the placing upon the market of a reliable preparation. Third, he believes that the use of this remedy must be always more or less empirical, for while it is true that most cases of puerperal infection

are due to streptococci, there are others which suffer from a mixed infection or in which the streptococcus is not present at all. Again, the treatment is not entirely free from risk, for several French observers have reported deaths in which the result was apparently unmistakably due to the serum. Again, its use may cause the physician to be careless in the employment of other necessary remedial measures. And, finally, we know nothing as to the real method by which the serum does good. Norris concludes the report of a case in which he employed the serum by stating that very strong clinical evidence of streptococcic infection should be had before resorting to the employment of antistreptococcic serum in the treatment of puerperal sepsis.

Shoemaker's case, one of septicemia occurring after abortion, was treated in this manner, but the patient nevertheless died. Davis expressed the belief that this method of treatment must be employed early, in connection with stimulating agents, and we may then hope for a good result in a small number of cases if they are seen promptly; while Baldy seemed to think that the death of his patient resulted from the administration of the serum. He states that while it is possible that death occurred by coincidence after the administration of this treatment, he will nevertheless in future use the serum, if at all, with the utmost caution and distrust.

The contribution to this symposium made by Shober consisted in a series of twenty-one cases collected from the *Lancet* and *British Medical Journal* during 1896. Shober concludes that to obtain the best results it is of prime importance to obtain reliable serum, that the case should be one of unmixed infection, that the injections ought to be commenced upon the onset of symptoms, and, finally, that it is highly important to employ intra-uterine and vaginal treatment in connection with the serum treatment.

POISONING BY QUININE.

In a number of issues of the THERAPEUTIC GAZETTE we have called attention in its editorial columns to the fact that quinine is one of those drugs which very frequently produce untoward symptoms in patients who are unduly susceptible to it, and the development of curious circulatory and skin symptoms which can not be referred to any ordinary cause will often be found to be due to quinine which the patient had prescribed for himself or herself. The number of cases in which quinine has produced symptoms varying in severity from gastric disorder with headache and deafness, to delirium, coma, blindness, and absolute deafness are a multitude. Sometimes delirium and marked vertiginous symptoms have been produced.

On the other hand, instances in which the drug has been taken in doses large enough to produce death are certainly exceedingly rare. Stillé tells us that Malier has recorded four such cases. In the first the patient suffered from delirium and coma and died on the second day; in another by Guersant, a man and his wife between them took nearly five ounces of the sulphate of quinine within the space of eight or nine days, the husband dying but the wife recovering. The smallest dose of quinine which has produced death is probably that recorded by Baldwin in *The American Journal of the Medical Sciences* for April, 1847, in which a child of six years died from taking eight grains of quinine in two doses, after an interval of three hours preceding the second dose. In all these cases it is interesting to note that the symptoms found at the post mortem examination were identical with those found in animals which died from large doses of quinine. On the other hand enormous doses of quinine have been taken without fatal consequences. Thus Guersant has recorded the case of a lady who took 600 grains within the space of a few hours, and Dietl gave a woman with epilepsy no less than 120 grains a day, this dose being arrived at by gradually increasing doses. Another case is recorded of an old woman who used 10 grains of quinine every two hours until 100 grains had been taken, without any bad effects having been produced. Our attention has been called to this matter by the report of a case by George Gresswell in the London *Lancet* for May 1, 1897. The patient was a woman of forty-seven years, just past the climacteric, who had, fortunately for herself, vomited about a quart of what she had taken for her breakfast after taking the poison. The history revealed the fact that the patient had taken two teaspoonfuls of quinine at the very least and shortly afterward seemed to be in a fit. Her hands and face were extremely pale, the pulse was quick and irregular, fluttering, small, thready, and feeble. The pulse was 120 a minute. Six or seven hours after the poison had been taken the patient was still speechless and quiescent, but not wholly unconscious. Long after consciousness had

returned and the patient's condition had improved her deafness was very marked, the pupils were contracted and reacted to light very slowly. Three days after the quinine had been taken an examination of the patient showed her pulse to be 72, her heart's action still feeble, and the presence of a slight presystolic mitral murmur. The deafness entirely left her.

Cases in which such large doses of a common drug such as quinine are taken with distinctly deleterious results are of very considerable interest, and for this reason we have thought it wise to call attention to the case recorded by Gresswell.

INTRAPERITONEAL DRAINAGE.

The question of intraperitoneal drainage is exhaustively considered from a clinical standpoint by Dr. John G. Clark, in the *American Journal of Obstetrics* for May, 1897, his conclusions being founded upon a critical review of seventeen hundred cases of abdominal section. Considering in the first place the subject of drainage in cases not primarily infected, it has been shown that if there has been excessive traumatism, blood and serum may accumulate in the dependent pockets and become encapsulated. This blood, however, does not lose its vitality immediately, but remains actively germicidal. Of one hundred ovarian cases but one was complicated by the formation of ovarian abscess after operation. In one hundred similar cases which were drained eight such sequelæ occurred. This tends to show that coagula rarely suppurate even though left to the care of a disabled peritoneum.

Experimental studies show that when an infected material which is difficult or impossible of absorption is introduced into the peritoneal cavity, peritonitis invariably occurs. The toxic effects are virulent and rapid in proportion to the injury to the peritoneum. It is consequently clear that the introduction of a foreign body into a peritoneal pocket would make a dangerous communication with the skin of the abdominal wall.

The streptococcus pyogenes is the most virulent organism, next comes the staphylococcus aureus, while the staphylococcus albus is the least harmful. The strict localization of the great majority of stitch abscesses, however, proves that the growth of the aureus — the common organism — is easily inhibited. Infection with the streptococcus, however, is commonly followed by marked septic symptoms, often terminating in death. The staphylococcus albus excites very slight reaction, although exceptionally it may produce a fatal peritonitis. The colon bacillus is also mildly toxic. It is nearly always found in perineal operations, though these cases run almost without exception a favorable course. The air organisms usually found in the projecting end of the drain for a short distance below the surface give rise to no reaction.

The danger of infection from the drainage tract is greater after the first removal of the drain than immediately after operation. In a few hours a cement-like fibrinous envelope is formed about the drain, binding the adjacent peritoneum and guaze together in the closest apposition. Attempt to remove the drain is extremely painful and may tear adhesions. In one instance fatal hemorrhage resulted from dislodgment of ligatures. During the process of organization, usually about the fifth day, the layer of fibrin in contact with the gauze degenerates, and the close band of union between the gauze and the peritoneum is dissolved. Large drain cavities are likely to refill with serous and hemorrhagic fluid after the removal of the drain; the abdominal opening may then become closed, thus preventing the escape of the infected fluid, when if it is not liberated by incision or dilatation of the drainage tract it may rupture into the general peritoneal cavity.

Clark considers the establishment of communication between intraperitoneal devitalized clots of blood and the exterior extremely hazardous. He holds it is much safer to allow small encapsulated collections of blood, like those found after the early rupture of ectopic pregnancy, to be disposed of by the means at Nature's command. Where these collections show signs of infection, or where there is danger of secondary rupture from further growth, if they cannot be removed from above Kelly's plan of puncturing and evacuating through the vagina should be followed. After operation the infection of the sac is prevented by the disinfectant properties of the normal vaginal secretion. In a recently ruptured case the conditions are different. There are free clots in the peritoneal cavity which if infected will cause death. Under such circumstances an abdominal operation is the only available course to pursue.

Considering drainage where infectious matter was supposed to be present during the

time of operation, it was shown that the pelvic accumulations of pus rarely contain active organisms at the time of operation. Of forty-four specimens staphylococcus albus and aureus were found once in culture. Fifty-six uteri were examined; in none of these were organisms found in culture. Schauta records 144 cases, with streptococci and staphylococci found in four, hence it is clear that infection of the peritoneum from the diseased area at the time of operation is not likely to occur, as the initial infecting organisms have disappeared.

With a view of ascertaining the merits of drainage Clark has selected two series, each of one hundred cases, of pelvic inflammatory disease, in one of which all were drained and in the other none were drained. These series were as nearly alike as possible. Untoward results are recorded, including fatal and complicated cases, in twenty per cent. of the undrained cases, 54.5 per cent. of the drained. There were persistent vomiting, vesical irritation, abnormal rise of temperature, and tympanites in fourteen per cent. of undrained cases and forty-one per cent. of drained; there was suppuration of abdominal wound in eleven per cent. of the undrained cases and twenty-four per cent. of the drained. Post-operative inflammatory deposits are recorded in one per cent. of the undrained cases and eight per cent. of the drained. There was a mortality of six per cent. in the undrained cases and thirteen per cent. in the drained. The tables demonstrate that the danger of rupture in intraperitoneal pus sacs is greatly overrated. There is nevertheless the possibility that virulent organisms may be present. Hence great care should be exercised in preventing the accident.

The higher mortality of the drained cases is largely due to infection through the medium of the drain. Fecal fistulæ followed drainage once in 1700 cases. It was due to pressure necrosis produced by the glass tube. At the end of the third week, the day after the removal of the drain, fecal matter began to escape from the drainage tract. In three other cases gas and small particles of fecal matter escaped from the drainage tract, but in each instance the opening closed before the patient left the hospital.

Russell finds that in at least eight per cent. of cases in which extensive drainage has been used hernia has followed. Buried wire sutures employed to close the abdominal wound have, however, decreased the danger of this complication. When drainage is employed a row of mattress sutures are buried along the line of incision down to the drainage sac.

Even when suppuration occurs granulations commonly form about the wire and healing takes place rapidly, although sometimes it is necessary to remove the sutures because of persistence of the discharge.

To avoid the sepsis ensuing after drainage the hands should be thoroughly disinfected. Zweifel's rule, that at least three days should supervene after contact with infectious matter before performing an abdominal operation, is a good one. Hemorrhage should be stopped by ligature, twisting and clamping. When oozing persists the peritoneum should be allowed to take care of it. Care must be taken to avoid bruising or injuring tissues. The general peritoneal cavity should be isolated during operation by walling off with gauze pads and non-absorbing cotton bolsters enveloped in gauze. As little of the peritoneum should be sacrificed as possible; bodily heat should be conserved, since it has been shown that resistance to infection is greatly decreased by lowering the temperature of the intestines; care should be taken lest intraperitoneal abscess rupture; the peritoneal cavity should be thoroughly irrigated with normal salt solution after operations during which débris or fluids have escaped into it. When the operation has been prolonged from one to two pints of normal saline solution should be introduced into the peritoneal cavity and the foot of the bed should be elevated eighteen inches for the first twenty-four hours.

If symptoms of infection arise after operation salt solution should be injected into the cellular tissues beneath the breasts. By elevating the pelvis after operation the normal peritoneal current may be assisted greatly by at once draining out the dead spaces. The infectious organisms are quickly carried into the lymph channels and are destroyed before they can increase in numbers, and toxic substances elaborated with the organisms are diluted and prevented from extending their irritant effects upon the wounded area. This posture, however, is not a curative measure after general peritonitis has developed. Free drainage is indicated under such circumstances, as the lymph channels are choked.

Drainage may be indicated in appendicitis when the stump cannot be securely closed or when the appendix is ruptured and has caused an abscess. If operation is performed in the early stage drainage should be omitted. Localized collections of pus in the pelvis should be drained through the vagina, unless

they can be cleanly enucleated. In excision of fistulous tracts leading from the intestine to the abdominal wall drainage may be indicated, since the suture frequently does not hold. In purulent peritonitis drainage is usually advised. Pawlowsky has shown that the lymph channels are choked with the infectious bacteria and inflammatory products; hence, thorough irrigation and free drainage through an abdominal incision are indicated.

As to the method of drainage, one or more strips of plain sterile gauze, doubled backward and forward like the folds of a fan, should be packed in; it should be lightly withdrawn and cut off as soon as the external end becomes dry. By the fifth day it should be entirely removed. When a second set is packed great care should be observed not to break up adhesions. The pelvis is most safely drained through the vagina. These drains are left in place five days and are replaced by a fresh strip of gauze, if it is necessary to keep the cavity open. To do this the patient should be placed in the lithotomy position across the bed and the vaginal opening exposed with a Sims speculum.

This contribution of Clark's, voicing, as it doubtless does, the opinions of Dr. Howard Kelly, is the most valuable and convincing paper which has appeared upon the subject. His conclusions are founded on years of faithful laboratory and bedside study, and are proven by the tabulations and statistics which are given.

Reports on Therapeutic Progress

THE TREATMENT OF TYPHOID FEVER IN CHILDREN.

F. GORDON MORRILL, of Boston, contributes an article on this comparatively rare affection of childhood to the *Archives of Pediatrics* for March, 1897. He believes that there can be no doubt of the necessity of adequate feeding, whether the case is that of an adult or child; and experience has therefore proved that milk is the safest and most convenient form of nourishment as well as the most grateful to the child, whose anorexia is complete, but whose thirst is fortunately great, during the acute stage of the fever. It should be given every two or three hours in four-ounce portions (less to very young children), and it is seldom necessary to dilute it, unless during temporary attacks of nausea or vomiting (common enough in typhoid), when the addition of lime-water or Vichy and the administration in small but frequently repeated doses are indicated.

Sleep is often disturbed, and advantage should be taken of the fact to give milk during the night as well as the day. In this way a child five years old will take from eighteen to thirty ounces in twenty-four hours, and older ones in proportion, up to fifty ounces, which seems to be about the average limit of their capacity. Should nausea and vomiting be persistent, in spite of the measures described above, withdrawing the milk entirely and substituting egg-albumen water in teaspoonful doses (to which a few drops of brandy may be added) seldom fails to promptly relieve a trouble which, as a rule, lasts a day or two only at the most.

In cases where there is any marked degree of prostration stimulants are of the greatest value, and their immediate effect on the puise and general condition of the child is pleasant to witness. Brandy in drachm doses *ter in die* is often sufficient for a child, although the writer has known eight times this amount to be given in twenty-four hours. He believes that a majority of all children with typhoid fever are distinctly benefited by the judicious use of alcohol; and of forty odd cases which entered his wards during the past autumn seventy per cent. were given brandy in amounts varying from one drachm three times a day to two drachms every two hours, at some period of the attack. The largest quantity was given during the acute stage of a second relapse, and the patient recovered.

Cold water is often craved and may be given pretty freely in cases where an ordinary quantity of milk fails to quench the thirst; but if there is the slightest difficulty in adequately nourishing the child, thirst must not be wasted in this way—the milk is to be insisted on.

During the acute stage of the fever there is less danger of digestive trouble if a milk diet is rigidly adhered to; but as soon as the temperature becomes normal, or assumes a low range, or sharp morning remissions, together with the patient's improved aspect, which signal the speedy attainment of convalescence, some predigested form of starchy food and somatose (which he has used with beneficial results in a number of cases) should be added to the diet. The liability to reinfection must be borne in mind (seventeen per cent. of one hundred recovered cases at the Children's Hospital have had relapses), and whether the patient's improve-

ment is followed by recovery, or merely precedes a few days which intervene between it and a relapse, an increase of nourishment in proper form will hasten the advent of health, or get the child in better condition to stand a fresh siege. When convalescence (slow and tedious in the mildest cases) is fairly established, a diet appropriate to the age of the child may be safely prescribed, and its ravenous appetite nearly if not quite satisfied.

The author has never seen the Brand method employed, and has had no experience in any special form of medication in the enteric fever of childhood, which tends to recovery, and runs a very close second to frank pneumonia, as a paradox, when its results are compared with those of the same disease in adults.

In the early stage, if there is constipation, calomel, both as a purge and intestinal disinfectant, may be given. It can cause no mischief (even in the massive European dose), and may be safely used. One-tenth of a grain every hour is usually enough to produce a result in eight or ten hours. Should the bowels remain inactive after a first thorough evacuation, glycerin enemata may be given every other day. If diarrhea is present in the early stage, calomel may still be given before employing other remedies to check the trouble, which so far as he has observed yields more readily to salicylate of bismuth in five- or ten-grain doses than to any other drug which does not contain opium.

To reduce a high temperature which is poorly borne, cool bathing may be employed; but the results are very temporary, and the average drop in the temperature (1.5° F.) hardly compensates for the extra work involved. Occasional doses of lactophenin are very effective and do no harm, so far as his experience goes, in any case where there are not obvious contraindications to its use. Lactophenin will produce an average drop of 3.5° F. in four hours. These figures are taken from careful records of the temperature in sixty-five instances in which the drugs were used. Restful sleep may often be obtained in this way. Children vary widely in their ability to bear hyperpyrexia, and on several occasions he has observed one with a rectal temperature of 105° F. sitting up in bed and amusing itself with books or toys.

When the first sound of the heart is soft, and alcohol fails to regulate a weak or irregular pulse, digitalis is most useful. When disturbed sleep is not due to a high temperature, a five-grain dose of trional acts admirably as a hypnotic. Aside from the remedies above mentioned he has found little use for drugs in average cases.

The most frequent serious complication which one is called upon to treat is that which results from the intestinal lesions failing to heal as is customary. Hemorrhage in a child varies from very slight loss of blood with each discharge, which may continue for days, to copious and fatal bleeding of which the thermometer may give no warning whatever. In case of any considerable hemorrhage, the foot of the bed must be raised, ice-bags applied to the abdomen, and gallic acid, opium, and lead given by the mouth, or ergotin by hypodermic injection. Injections of a normal salt solution into the cellular tissue may also be tried where marked prostration and anemia are observed. Perforation, if in a position to cause general peritonitis, is fatal, and nothing more than a free exhibition of opium is indicated, unless some bold surgeon can be induced to do a laparotomy. Bed-sores are rare and easily prevented. They would be far more common, as would hypostatic congestion of the lungs, if children did not frequently change position of their own accord.

Acute delirium is rare, but forcible restraint, or a "reminder" in the form of securing one or both hands to the frame of the bed, is occasionally required. Ominous nervous symptoms (strabismus, somnolence, retraction of the head, intense cephalalgia) appear in rare instances, and often vanish so promptly as to preclude the possibility of their having been due to organic changes. Mental disturbances almost invariably tend to entirely disappear, and call for no special advice or treatment. Retention of urine is rare, but daily percussion of the suprapubic region should never be omitted in cases where there is any suspicion of a lack of intelligence or care on the part of the attendants.

Diapers and bed-linen must be carefully looked after. They should be soaked in a 1-to-40 solution of carbolic acid for six hours, then boiled, and washed in vessels kept especially for this purpose. Discharges which are received in bedpans are to be covered with a 1-to-20 solution of carbolic acid, and after being thoroughly broken up are to stand twenty minutes before being emptied. The hopper and bowl of the closet should be washed in 1-to-20 solution daily. The nates should be carefully wiped with a 1-to-40 solu-

tion after each discharge, and the cloths with which this is done treated in the same way as the diapers. Rubber covers should be placed under the sheet on which the patient lies, and carefully washed off with a 1-to-20 solution if they become soiled. Thermometers should be carefully disinfected as well as washed each time the temperature is taken. The attendants should refrain from eating or drinking while in the immediate vicinity of the patient, and should wash their hands and use a nail-brush several times a day. The remains of food or drink which are brought from the sick-room should be thrown away, and all eating utensils washed in a 1-to-40 solution of carbolic, then immersed in boiling water, before they are allowed to return to ordinary use. All articles of clothing which come in contact with the patient must be disinfected and washed apart from those of other members of the household. Mattresses should be aired in the sun for several hours daily for a week after the patient recovers. When one reflects upon the infinite variety of ways in which typhoid bacilli may be carried (furniture, food, drink, utensils of all sorts, and in the air itself under certain conditions), it is a matter of surprise that the disease is not more prevalent — as it doubtless would be if the micro-organism (like that of diphtheria) did not require a special soil in which to flourish and prove its virulence.

THE TREATMENT OF FURUNCULOSIS.

In the *Journal des Praticiens* of January 23, 1897, ROBIN recommends the following treatment for boils:

The skin is first washed with water and pure soap, and afterwards the following prescription made up into three cachets is administered:

℞ Sublimed sulphur, 2½ drachms;
Powdered camphor, 30 grains.

As soon as a point of redness appears in the skin a small compress is applied over it, which will often abort the boil. If the boil has already actually formed the complete evacuation of its contents is needed, and after it is opened the following should be applied to it:

℞ Sublimed sulphur, 2½ drachms:
Powdered camphor, 2½ drachms;
Glycerin, enough to make a paste.

After this has been applied for twenty-four hours the part should be washed with boric-acid water and atomized with a 1-to-100 solution of carbolic acid, and then the application of the sulphur paste should be repeated.

PURULENT OPHTHALMIA OF THE NEW-BORN.

The New York *Medical Record* contains an editorial on this important and ever interesting subject in its issue of March 13, 1897. In its course it points out the well recognized fact that of the many dangers attending the newly-born infant ophthalmia neonatorum is the most to be dreaded. It is stated that one-third of all the blind in Europe become so from this cause. Its early recognition and unremitting treatment are of the utmost importance. In every obstetric case the physician should gently separate the lids of the infant, to assure himself definitely of the presence or absence of any eye discharge. Infection from the maternal passages manifests itself almost invariably by discharge on the third day, both eyes being affected as a rule. Discharges appearing at a later period usually arise from soiled hands, towels, or sponges; and only one eye may be primarily attacked. This conjunctivitis is never due to strong light or cold, as is popularly supposed, but has a definite specific origin.

Following a discussion of the Medical Society of Breslau concerning Crédé's method of treating such cases with the aqueous solution of nitrate of silver (one grain to a drachm of distilled water), twelve thousand question blanks were sent out to physicians, with results that form an important contribution to the subject. These blanks were distributed throughout Germany, Austria, Switzerland, Belgium, and Holland. Reports were returned giving statistics of eye disease in 302,971 new-born infants. Of these, 1938 suffered from ophthalmia neonatorum. In Germany, sixty per cent. of eye disease was of this nature; in Austria, eighty per cent.; and in Switzerland, Belgium, and Holland together, ninety per cent. In all these cases the characteristic condition appeared within five days in seventy-six per cent. of the infants under observation. The discharge began after the fifth day in twenty-four per cent. In one-fourth of the entire number of cases one eye was attacked primarily; in three-fourths both were affected simultaneously. Seventy-one per cent. were completely cured. Nine per cent. discontinued treatment. Twenty per cent., or one-fifth of the 1938 cases, retained permanent lesions of more or less severity.

This twenty per cent. presented corneal scars, monocular or binocular; and one-half of these permanently damaged infants became totally blind. It was considered they were

brought too late for cure—fifty per cent. of the blind babies were not seen until the ninth day of their disease, and twenty-five per cent. not until the fourteenth day.

Out of one hundred representative ophthalmologists consulted, seventy-nine were in favor of making Crédé's method obligatory in routine obstetric practise. It is not difficult, does no harm, and may avert dreadful catastrophe. The eyes are first carefully washed with tepid water, and the lids thoroughly cleansed by means of absorbent cotton. A few drops of the two-per cent. solution of nitrate of silver are then instilled into each eye. Materials used to wipe away the discharge must be burnt or otherwise destroyed. Twice daily some simple ointment should be applied to the margin of the lids, to prevent them from sticking together. In severe forms, when there is much swelling and a thick discharge gushing from between the lids, the foregoing nitrate of silver solution may be used every six hours. When the inflammatory action subsides, Muskett recommends that weak solutions of alum, sulphate of zinc, and perchloride of mercury be substituted. The astringent lotion may consist of from four to ten grains of alum or from one to two grains of sulphate of zinc to the ounce of water. Either of these may be used with freedom and safety. The mercury solution gives excellent results—one-half grain of the perchloride to six ounces of distilled water. Cold-water compresses give great relief after active treatment.

Should ulceration of the cornea ensue in spite of active and earnest measures, the eserine treatment introduced by De Wecker may prevent perforation in even the worst cases. Four grains of eserine in one ounce of distilled water is the strength usually employed, though sometimes one grain to the ounce is better borne. A few drops are instilled into the eyes six times a day. This treatment is also of value in a form of corneal affection peculiar to infantile purulent ophthalmia, mentioned by Nettleship, in which the cornea becomes rapidly and almost entirely opaque. Marginal ulcers are not so serious as those centrally situated, and sight may be preserved. More than in any other disease, Dr. J. Lewis Smith urges the necessity of employing faithful and attentive nurses, who will carry out punctually the directions given. Two nurses are required, one for day and the other for night duty, since it is essential that the eye be frequently cleansed and the secretion washed away.

THE USE OF ANTITOXIN IN THE TREATMENT OF DIPHTHERIA.

It should be the duty of every practitioner to place the antitoxin at the head of all therapeutic measures that he may know of for the cure of diphtheria, for it proves its efficacy whenever it is administered early, and in sufficient quantities to neutralize the poison which it is to antagonize. This is the opinion of Dr. DUFFIELD, of Detroit, as expressed in an article in the *Journal of the American Medical Association* of March 6, 1897.

An early diagnosis cannot always be made from the clinical symptoms; frequently a tonsil may be covered with spots like a follicular tonsillitis, and one of the spots be true diphtheria and the case treated for an ordinary tonsillitis, when in reality a true case of diphtheria is developing in a medium that will prove a regular hotbed for the development of the Klebs-Loeffler bacilli.

All cases suffering from sore throat should receive the benefit of the doubt as to whether the case be one of simple or diphtheritic sore throat by a bacteriologic examination, and the earlier such an examination is made, the greater the chance of saving our patient.

The Detroit Board of Health has furnished test-tubes for the making of cultures from suspected sore throats, and the writer believes that if they were used more often the epidemics in Detroit would be reduced.

The dose to be administered at first is a question of importance. He thinks it is better to overdose at first than to give a lesser curative serum. The bulk is the same, whether 500, 1000, 1500, or 2000 units are used, and as the inserting of the needle is always painful it is better to give a full dose early, rather than to have to repeat the injection.

The amount to be used depends upon the length of time the patient has been sick, the extent over which the membrane has spread, and the thickness of the membrane.

As to the antitoxin to use, having tried five or six different makes in the past two years, he has found that which is manufactured by Parke, Davis & Co. most efficacious. Apart from the potency of this brand, he states that he must commend the ingenious manner in which it is marketed, viz., in hermetically sealed glass bulbs, which exclude the air and keep the serum strictly aseptic.

From the charts he exhibited it could be seen that when a dose was given of sufficient strength the action on the toxin producing the constitutional symptoms—namely, fever,

high pulse, and great prostration—was prompt and effective; the fever being reduced rapidly. Laryngeal cases recovered slowly, but showed marked improvement after each injection.

Strange as it may seem, the serum varies in strength, different manufacturers furnishing the same number of units in various bulks, and many brands containing a less number of curative units than claimed. Such brands are to be avoided. The most concentrated serum is, he thinks, the best to use, as there are rarely any bad results from its injection. It has been noted in several cases that an erythema or urticaria develops around the point of injection. None of the severe symptoms as noted by some have been noticed by the writer, though several hundred injections have been given under his direction. Several have had rheumatic pains, but no other symptoms showed themselves, not even an abscess, and their absence was probably due to the great care used in the manufacture of the serum administered.

During the past year there have been 111 cases of diphtheria in Harper Hospital, five of which died. Three of these entered moribund, and one man had been sick six days before entering the hospital, and the action of the toxins upon his heart centers was so great that he died from heart failure, the result of the diphtheritic poison. Some cases where large doses of antitoxin were used close together showed subnormal temperature for several days. There have been six tracheotomies and twelve intubations. There have been many laryngeal cases that were treated successfully merely with antitoxin and inhalations. The youngest case was a child of five weeks, bottle-fed. During the months of October, November, and December there were over seventy cases in the hospital under the author's care, and six in private practise.

The nurses who were on duty were at first immunized with 250 units, later with 500 units, and still later with 1000 units, as the prophylactic effect was better. The nurses were constantly, except when off duty, exposed in an atmosphere saturated with diphtheria. Two nurses took the disease after having been immunized, and one took diphtheria after nursing a man who started with "follicular tonsillitis," but which later turned to a true diphtheria. All the nurses recovered. When the disease was taken by those who had been immunized the attacks were mild.

In all the hospital cases the patients had been sick from two to three days before entering, hence it was necessary to use the strongest antitoxin serum early and repeat the dose in six, twelve, or twenty-four hours, if the growth of the membrane was not checked or stenosis promptly relieved.

The resident physicians have several standing orders that patients receive as soon as they reach the hospital, for they believe in using some medicines that proved useful before the discovery of the antitoxin.

An examination of the throat is made to see the extent and location of the membrane, and the following treatment is instituted:

1. A hypodermic of antitoxin, 1500 or 1000 units.

2. A liberal dose of calomel if tongue is coated and bowels constipated.

3. An ice-collar, worn until all glandular enlargement disappears.

4. A gargle every two hours of hydrogen peroxide two parts, euthymol two parts, lime-water four parts.

5. Membrane to be touched for ten or fifteen seconds with Loeffler solution every three hours. This is composed of:

> Menthol, 10 Gm.;
> Toluene, q. s. ad 26 Cc.
> Creolin, 4 Cc.;
> Iron chloride solution, 4 Cc.;
> Alcohol, q. s. ad 100 Cc.

This dissolves the membrane and destroys the Loeffler bacilli *in situ*.

Should the patient be needing a stimulant, the calomel is omitted and whiskey or strychnine administered. Other symptoms are met by appropriate means as soon as they arise.

Cases of laryngeal diphtheria are treated with steam inhalations after being injected. Children with pneumonia complicating diphtheria are put in the oil-silk jackets and kept in an atmosphere of compound tincture of benzoin and other non-irritant inhalations.

The frequency of dose of the antitoxin depends upon the spreading of the membrane and the condition of the temperature.

How soon is a patient to be discharged as cured? The writer has a culture taken from throats each day for three or four days until all Klebs-Loeffler bacilli disappear before he pronounces the cases well enough to mingle with others, for it has been known that the Klebs-Loeffler bacilli may be carried in the throat of a person without danger to himself, and yet be a source of great danger to others.

As a rule the cultures taken after all membrane has disappeared from diphtheritic

throats prove negative after three or four days.

Just how dangerous the diphtheritic bacilli are after the use of the antitoxin remains for the bacteriologist to determine. Where antitoxin has not been used he has known reinfection to occur ten or fourteen days after the primary attack.

Diphtheritic paralysis developed only slightly in two cases, but more severely in another case where all the vital centers had suffered from previous disease. Albuminuria was noted in a few cases, but as the disease predisposes to renal disease the antitoxin could not be held responsible; all these cases cleared up as soon as the poison was neutralized. No secondary infections occurred after the disease was once under control.

REVIEW OF RECENT EXPERIENCES IN THYROID TREATMENT.

There are very few drugs in the Pharmacopœia for which it can be claimed that they cure the diseases they are given for in the same sense that thyroid preparations cure myxedema. When the cretin, for example, is subjected to thyroid treatment we find that every one of his functions and tissues is the better for it. Thus his appetite, his digestive powers, and his general tissue-metamorphosis are greatly increased, and he grows amazingly. He generally becomes reduced in bulk at first from losing some of his unhealthy fat, but afterwards he gains weight again, his muscular and connective tissues become healthier and more compact, and his skin softer and moister. His brain tissue also gradually improves in quality, and his mind works more freely and assumes a markedly healthier attitude towards both itself and its surroundings.

It was to be expected that the marvelous efficacy of the remedy in these cases would lead to its being tried in other morbid conditions, and we find that this has been so. Indeed, it would seem as if by this time there was scarcely a disease with any symptoms at all like any of those of myxedema which has not been subjected by some one to thyroid treatment.

It may, perhaps, be of interest to pass shortly in review a few of the more recent papers which deal with the effect of thyroid in some of the diseases of childhood and youth, and to see what measure of success they are able to record.

One of the most interesting and seemingly most successful applications of the remedy is in dwarfing of various kinds. F. Boullenger and Julius Schmidt, following Hertoghe of Antwerp, have been studying its effects on the growth of non-cretinous children who had not reached the height proper to their age.

Boullenger records nine cases from Bourneville's department in the Biecêtre. Of these, four were idiots or imbeciles suffering also from obesity. They were given large doses of sheep's thyroid (half a lobe every day or every second day), and although the effect in diminishing their weight was only temporary, the way most of them gained in height was most remarkable. In one the gain amounted to 2⅜ inches in five months. The other five children were also mostly of defective intellect, besides being much dwarfed in stature. In them the treatment caused some increased growth, but not so much as in the others. This may possibly have been partly due to the fact that those of the latter group were older.

Schmidt's cases were four in number, and were children who, apart from their backward growth, were normal both in body and mind. The administration of thyroid tablets was followed by remarkable increase in height. One case gained nearly 4¾ inches (12 centimeters) in a year.

Hertoghe has recently published a number of skiagraphs of the hands of dwarfs of various kinds, and he has pointed out that the state of the epiphysial cartilages seen in these enables one to give a very confident prognosis as to the possibility or impossibility of renewal of growth under thyroid treatment in any individual case.

There are every year taken into the children's wards of the Charity Hospital, Berlin, a large number of very severe cases of rickets. In spite of every care and all manner of treatment (including phosphorus) nearly half of these children die, generally from bronchopneumonia or enteritis. It occurred to Professor Heubner, after reading Lanz's paper on the connection between the thyroid and the growth of bone, that thyroid extract might influence these cases favorably, and during nine months he gave this a careful trial in sixteen cases.

The result of this experiment, however, was almost completely negative, as he records in a recent paper. No change of any kind could be detected in the morbid condition of the bones. Nevertheless, the mortality of the cases under thyroid was distinctly less than that of those on former methods of treatment

(one-third instead of one-half). This is regarded by Professor Heubner as probably due to an improvement being brought about in the general health of the children, which increased their powers of resisting those complications to which they are generally prone. The complications occurred, but the children seemed to get over them more easily. He thinks that although the thyroid treatment of such cases cannot be claimed as a great therapeutic advance, and has certainly no specific effect on the rickety process, further trial may prove it to be of decided use in suitable cases.

A number of skin diseases have been treated with thyroid with very varying results. One of those in which it seems to have been most successful is prurigo (Hebra). Dobrowsky treated eight cases of this affection with very good results. The children were given no other treatment, and they improved rapidly and very greatly. Within a few days the itching was relieved, the secondary eczema subsided, and the child's general health benefited markedly from the recovered night's rest. The parents were all agreed that no previous form of treatment which they had tried had acted so speedily and so thoroughly. The disease relapsed, however, when the thyroid was discontinued. In 1895 cases were published by Gottstein and by Byrom Bramwell, which seemed to indicate that thyroid preparations exerted a specific effect on tetany. The hopes raised by these communications have not, however, been realized. Many cases of the ordinary infantile form, which occur in rachitic children, and are so commonly associated with laryngismus and convulsions, have since been treated with thyroid by a number of observers. In these there was either no improvement whatever, or it was so slight and so long delayed that one could not but doubt whether it was due to the thyroid at all.

Wolfstein writes an interesting if not very conclusive paper on the case of a girl of twelve, with chorea and very scanty urine, who improved remarkably after being given thyroid tablets (one to three daily). The urine increased in amount at once, and the choreic movements rapidly subsided.

Cases of idiocy of various kinds have been frequently treated with this remedy; but the universal experience seems to have been that practically no improvement of the intellectual powers has resulted. In some instances, however, considerable benefit in the way of bodily growth and lessened obesity has been observed by Boullenger, Dobrowsky, and others. In those cases which are accompanied by convulsions these are not, as a rule, favorably influenced by the treatment.

Two children with exophthalmic goitre were treated by Steiner with thyroid, without any effect whatever. In nine cases of parenchymatous goitre, however, Dobrowsky found considerable benefit.

From these few abstracts we may gather that if the thyroid substance is not a panacea for all sorts of disease, it is at least a remedy of considerable power, quite apart from its action in myxedema. Its effects are certainly worthy of further careful clinical investigation; and we may hope that a more intimate knowledge of them may lead to its being found a very useful addition to our therapeutic resources.—*Pediatrics*, March 15, 1897.

THE THERAPEUTIC VALUE OF NEBULIZED FLUIDS.

F. T. ROGERS, in the *Atlantic Medical Monthly* of March 20, 1897, contributes an article with this title. After describing the nebulizers usually employed he tells us that he can recall numerous cases where the inhalation of the nebulized solution of various antispasmodics promptly relieved asthmatic paroxysms, and with greater ease of application than was possible by the ordinary method of fumigation. Of late years the writer has not seen this disease in his practise, but has had ample opportunity in his own family to test the efficacy of the treatment.

The following solution, nebulized and inhaled, has given the writer the greatest satisfaction:

℞ Antipyrin, 15 grains;
Pyridine, 1 drachm;
Sodium nitrate, 2 drachms;
Tincture belladonna,
Tincture lobelia,
Tincture stramonium,
Tincture ipecac, of each 5 drachms;
Glycerin, q. s. ad 4 ounces.

Relief has been instant and prolonged, and in two cases of periodic hyperesthetic rhinitis with asthma the solution used in one of the hand nebulizers has proved efficient and has not had the usual loss of efficacy upon repeated trials which so commonly is found with almost any antiasthmatic mixture.

The systematic use of the nebulizer with forced inspiration offers to the asthmatic a double value of exercise and medicine.

Every man, whether engaged in general or

special practise, is likely to be asked at some time to quickly relieve the hoarseness resulting from an acute or subacute laryngitis, and more frequently that due to its chronic form. The use of cocaine in spray followed by the topical application of nitrate of silver or chromic acid is the classical treatment and is the most efficacious in the majority of cases, but Rogers has also gained excellent results by the use of a nebulized fluid containing these drugs, and it has the great advantage of producing quite as much effect on the mucous membrane of the larynx, without the ofttimes distressing spasm which results from applying a caustic solution.

In cases of public speakers, singers, or actors, it has a further advantage—the possibility of auto-application; and when tried just before the effort of speaking or singing is much more efficient than is possible for a topical application to be when made at the office several hours previous.

In acute coryza—that is, in certain cases—the effect the writer has gained from the use of a four-per-cent. solution of antipyrin has been marvelous, and the contractile effect upon the engorged mucous membrane is not only quite as persistent as that of cocaine, but has none of the disadvantages of that drug.

Too many of the abortive forms of treatment for colds depend entirely upon cocaine for their efficacy, and the danger of toxic effects and even the formation of the drug habit are powerful reasons why this drug should not be used.

SOME USES OF CHLORAL HYDRATE IN THE DISEASES OF CHILDREN.

In *Treatment* of March 11, 1897, SUTHERLAND says there are some drugs the dangers of which are so emphasized that their good qualities are apt to be lost sight of. One of these is chloral hydrate. In this communication it is not proposed to advocate the indiscriminate use of the drug, but to show that when employed in suitable cases, at the proper time, and in doses sufficient to produce a definite effect, it may prove of value. The method of administration will be given in detail in the accompanying histories. It is essential that the drug be absolutely pure, and that the patient be kept in bed and carefully watched when full doses are being employed. When these precautions have been taken the writer has not found any bad effects follow, either immediate or remote. The appetite has not been interfered with, the intestinal functions have not been disordered, signs of cardiac failure have not occurred, and the drowsiness and lassitude produced by full doses have soon passed off when the drug was stopped. It may be administered alone, or when cardiac complications exist with tincture of digitalis, or in some cases it may be advantageously combined with bromide of potassium or ammonium.

The following case illustrates the effect of chloral in epilepsy: The patient was a girl, aged eight years, who up to the onset of the first fit in August last had enjoyed good health. There was a history of epilepsy on the mother's side of the family, but no other cause could be assigned for the patient's illness. At first the attacks were few in number and of short duration, resembling those of *petit mal*. In the course of the following four weeks the fits increased in number and severity. They occurred both by night and by day, and during an attack the patient was unconscious for two or three minutes, clonic movements were present, affecting the left side chiefly, and sometimes the urine was passed involuntarily. The treatment during this period comprised arsenic, bromide and iodide of potassium, and strychnine, but the fits continued steadily to increase. The patient was then ordered six grains of potassium bromide and six grains of chloral daily, in three doses, and this was quickly followed by a marked diminution in the number of fits. At the end of a fortnight there was a slight increase in the frequency of the attacks, and the dose of the medicine was doubled. This was again followed by a good result, and at the end of eleven days the medicine was stopped. The patient was put on small doses of potassium bromide, digitalis, and arsenic. Almost immediately the fits recurred with greater frequency, amounting to as many as twelve in one day, and increasing doses of the bromide had no effect in checking them. For the twenty-five days before the chloral was commenced the number of fits was 150; for a similar period during which chloral was used the number of fits was 45; and for a similar period after the chloral was stopped the number of fits was 142. The fits had been steadily increasing in number and severity up to the time that the chloral was started, and after it was stopped they again increased until their number and severity was greater than at any previous time. This condition of affairs persisted, although the potassium bromide was increased to sixty

grains daily. As the patient's general condition was very much worse it was decided to try stronger measures. Sixty grains of potassium bromide and thirty of chloral were ordered to be given in three doses at intervals of six hours. On the following five days the same medicine was continued in slightly lessened amount—fifty grains of bromide and twenty-five of chloral. The number of fits decreased rapidly under this treatment, the total during a period of nine days being twenty-four, while the number during the similar period immediately preceding the chloral treatment was ninety-four. As a precautionary measure the bromide and chloral in the above doses were repeated at intervals of three or four days during the next fortnight, but whether this was necessary or not it is impossible to say, as the last fit occurred on the ninth day of the chloral treatment, and a period of four months has elapsed since then without any recurrence. The patient's general health is excellent at the present time.

The following case illustrates the effect of chloral in progressive chorea: A girl, ten and a half years old, developed chorea, which continued to increase in severity for a period of two months. During the first month no advice had been sought, but during the second she had been treated with arsenic, strychnine, massage, with full diet, a moderate amount of alcohol, and rest in bed. At the end of that time the patient was getting worse instead of better. The cardiac action was rapid and somewhat weak, and a systolic murmur of mitral origin was present. The movements were general over the trunk and extremities, the emotional and intellectual centers appeared to be more unstable, and the exhaustion was more marked. More active measures were therefore called for. The amount of stimulant was increased to four ounces of brandy daily, and ten grains of chloral was ordered every four hours. Four doses were given, securing about twenty-four hours' sleep and rest to the patient, and then the chloral was resumed in ten-grain doses twice a day. On the third day after commencing the chloral it was definitely noted that the movements were less violent and less continuous, and that the cardiac action was slower and stronger. On the sixth day the brandy was reduced to one and a half ounces, and the chloral to one dose of ten grains daily. On the eighth day the jerking had practically ceased, and coordinating movements of the limbs could be carried out with precision. The chloral was discontinued five days later, and the patient allowed out of bed.

The following case illustrates the effect of chloral in the paroxysmal dyspnea of asthma: A boy, aged three and a half years, had suffered from bronchitis and asthma for six weeks, there being severe and prolonged attacks of dyspnea at night. On examination of the chest there were heard numerous catarrhal sounds, and expiration was prolonged and noisy. The breathing during the day was comparatively easy, but at night, usually about 2 A.M., he was awakened by a sudden difficulty in breathing, which persisted for an hour or two, and was asthmatic in character. This was repeated on each of the five following nights, being unaffected by treatment with carbonate of ammonia and iodide of potassium, medicated steam inhalations, stramonium fumes, etc., although the bronchitic signs had considerably diminished. These medicines were then stopped and the patient was ordered ten grains of chloral and five minims of tincture of digitalis twice daily. The following night passed without an attack of dyspnea. The medicine was continued for a week and then stopped, as there had been no recurrence of the asthmatic seizures. During the following fortnight he made good progress, was up and about, and had no attacks of dyspnea. Later on he caught cold, and the breathing again became very labored at times. After the acute symptoms had subsided he was again ordered chloral, ten grains every six hours if required. It was found, however, that one, or at most two, doses daily were sufficient to ward off the acute attacks, and after a fortnight it was discontinued. When seen some weeks later he had not had any further attacks of dyspnea, although the breathing was still asthmatic in type.

These affections resemble each other in being associated with an unstable condition of the nervous system, which manifests itself by some disturbance of function. This disturbance by repetition leads to the production of a vicious habit which it is difficult to cure. It is probable that no single drug is suited to all cases of this description, and in the writer's experience chloral is found serviceable in some cases. The best method of administration would appear to be to give the drug at first in full doses so as to break the habit as quickly as possible, and then in doses sufficiently large to keep the evil tendency in check.

UNNA'S DRESSING.

In the Philadelphia *Polyclinic* of March 20, 1897, IDE describes the various uses of Unna's dressing, and tells us what it is and what it can do. Its chief value is for chronic ulcers and sprains or eczematous patches with induration.

Unna's dressing, when completed, consists of a combination of Unna's mixture, or paint as the writer prefers to call it, and gauze bandages in layers, the bandages forming the basis, the paint, which hardens as soon as it becomes cold, impregnating the gauze and being built upon it. The paint is a white mixture which, when cold, resembles very closely the white rubber of which syringes, hot-water bottles, etc., are made. It is of a spongy, elastic consistency, and when heated becomes fluid. The formula according to which it is prepared is as follows:

Gelatin, 4 parts;
Water, 10 parts;
Glycerin, 10 parts;
Zinc oxide, 4 parts.

The gelatin and cold water are put together, in a basin, over a fire, and when the gelatin is thoroughly dissolved in water (there must be no lumps) the other constituents are added, the zinc oxide being added slowly and stirred in thoroughly. The writer always has his made and poured into a quart pail to cool, in which he carries it about, keeping it covered. The zinc oxide is soothing to the skin, especially when the dressing is applied over a chronic eczema. The gelatin gives the paint its adhesive quality, forms its basis, and imparts elasticity to the finished dressing, thus enabling it to exert an even compression. The glycerin has a dehydrating effect upon edematous tissues. Sometimes, as a result of this action, swelling is reduced very rapidly, fluid coming from the tissues and oozing through the dressing. Besides the paint, a supply of gauze bandages and a wide paint-brush are necessary. The gauze bandages can be made from cheese-cloth by drawing threads, and cutting along the line thus made. Two and a half inches make a convenient width for the bandages, and the brush which the writer uses is three inches wide.

The dressing is applied as follows: The limb is scrubbed with soap and warm water, and after being dried is rubbed over with alcohol. When this has evaporated the limb is ready for the dressing. In the meantime the pail of Unna's paint should have been placed over a fire in a hot-water bath, which can be improvised anywhere from a tin or agate basin. After the paint is melted it is ready to be applied; but do not apply it too hot or the patient will object strenuously. One should test the degree of heat by painting the palm of his own hand. Ide always removes the paint, with its hot-water bath, from over the fire when he begins the application, replacing if it begins to harden before he finishes. With the brush a layer of paint is applied all over the limb, with the exception of the ulcer (if one be present), and over this one layer of gauze bandage is placed in sections, as in any other case, with the one exception that it must be laid flat all the way. There is one rule which must be faithfully adhered to in the application of this dressing, and that is to have no wrinkles at any point in the bandage. Where the bandage begins to wrinkle we must cut it off and begin it flat again. This is why the writer said above that the bandage is to be applied in sections. No section which is more than twelve or eighteen inches in length can be correctly applied. In applying the dressing to a leg he always begins, after the first layer of paint, with a strip of bandage around the foot close to the base of the toes, just as a narrow strip is placed there in applying a plaster-of-Paris bandage to the foot. A second strip is placed around the heel, the middle of which is at the point of the heel, and the ends of which reach to the outer and inner malleoli respectively. Another strip is applied around the heel a little above the first, but overlapping it somewhat. Still another is placed below the first on the bottom of the foot, but overlapping it as did the second. The ends of these other two are brought together at the malleoli, so that they all radiate from the malleoli out around the heel at different levels. In this way the heel is covered in, and then the writer returns to the toes and covers in the foot and leg. In this dressing the bandage is entirely enclosed in the paint after it has hardened, giving it body or basis. A continuous bandage cannot be applied without the production of wrinkles. We can use a roller bandage, however, by pulling it fairly snug with the limb in a horizontal position, the heel resting on a chair or bench, and after as many turns have been made as can be without wrinkles cut the bandage off and start again with the bandage flat. After each section is applied it is painted over with the brush. We must be sure that the bandage fits snugly, making even compression everywhere. If a weak spot is found, where the flesh seems to bulge,

it is to be fortified with a piece of bandage covered with paint. In this manner apply two or three layers of bandage, preceding and following the application of each with a fresh application of the paint over the whole surface. After the last layer of gauze has been applied and painted over, the dressing is covered with a cotton bandage which is left on for twenty-four hours, for the sake of cleanliness, and then peeled off. Under this is found a smooth dressing resembling white rubber, as mentioned above, which is elastic and comfortable and far superior to elastic stockings, each dressing being a perfect fit for the limb to which it is applied. The paint is then washed from the toes and from the skin above the upper edge of the dressing or stocking, and the work is complete. Warm water will remove the paint from the skin or clothing or floor, or anything which is accidentally daubed with it.

The operation requires time and patience, but dexterity is soon acquired. It is a rather dirty job, so that it is well for the operator to have on a rubber apron, and for the floor to be covered by a rubber sheet.

The dressing can be applied to the foot alone, or to the foot and ankle and leg, or to the whole lower extremity; so also to the hand and upper extremity. The upper and lower edges of the dressing must not fit too snugly or end too abruptly, otherwise there will be swelling above or below.

In cases in which there is much edema it is advisable for the application of the dressing to be preceded by massage while the limb is elevated.

Where ulceration is present a wad of cotton is placed over the ulcer, under which is made whatever application may be desired. In such a case when, in the course of the application of the bandage, the ulcer is reached, it is dressed and covered over with a flat piece of cotton and then the dressing is applied over that as if there were no ulcer present. All is left in this condition until the discharge from the ulcer has soaked through the dressing and become foul. Then a window is cut through the dressing, just the size of the ulcer. We begin the window by cutting a very small hole over the center of the cotton which covers the ulcer. This the patient can always locate accurately. The small opening is enlarged by degrees until it corresponds exactly with the size of the ulcer. One may now treat the ulcer as often as indicated, but should not be in too much haste to cut the window. The even compression which presses the parts surrounding and including the ulcer together and places them at rest does far more good than any application one might be using up to this point. Every twenty-four hours will see the edge of the ulcer nearer its center and farther away from the edge of the "window."

This dressing has superseded the old rubber bandage, which should be thrown to the dogs, for it can but produce (vaso-motor) paresis of the capillaries of the parts over which it is applied. Unna's dressing is far superior to elastic stockings if the patient can afford to have one applied, say once in six weeks or two months.

The most important result which it brings about, from the patient's point of view, is relief from pain and production of comfort from the first. Many a patient has declared to the writer that the first good night's rest he has had for months, and in some cases for years, followed the application of the dressing. For the first day or two it will seem rather tight over the front of the ankle, but it soon stretches a little, the swelling under it disappears, and in two, or at most three, days the patients walk with comfort, provided one cannot induce them to "lie up" and give the limb absolute rest for a time. When the patients can afford to rest it is far better to keep them in bed, or up and dressed with the limb elevated constantly. To this class belong the patients who are treated inside a hospital and in whose cases the most brilliant results are achieved. Those patients who cannot afford to give up all their time to treatment can keep on with their work, and in such cases the improvement is constant and progressive and encouraging, though not so rapid as in the cases which can be kept under control all of the time. The writer remembers the case of a butcher who stood on his feet many hours each day, and yet the improvement was steady. In the case of people who work during the hot summer weather perspiration will soften the dressing around the foot and ankle, and so necessitate its renewal sooner than in cooler weather.

The most important result effected, from the surgeon's or dermatologist's point of view, is the support of the weakened tissues and blood-vessels, especially the veins, and the great improvement in the circulation brought about by the even and elastic compression. The veins are assisted in reassuming their suspended function; feet which have been cold and blue for years, winter and summer, become comfortably warm and

assume the natural pinkish hue; the tissues are dehydrated both by the action of the pressure and the glycerin; fluids which have been exuded into the connective tissue are absorbed and carried away in the circulation, edema disappears, and the swelling goes down, the dressing becomes loose, wrinkles appear in it, and it soon becomes so loose that it must be replaced by another. Sometimes this is necessary in three weeks, but the average time which the dressing has lasted in the author's experience is four weeks. He recalls, however, the case of a hotel clerk with the alcohol habit, tertiary syphilis, slight cardiac dropsy of the legs, with a varicose condition of the veins, with now and then an attack of subacute phlebitis, in whose case he found it necessary to replace the dressing in less than three weeks during hot weather. When the skin is blue and there have been extravasations of blood from the rupture of small veins or venules, followed by ecchymosis and discoloration by blood pigment, the venous blood is sent along, the pigment is absorbed, and the skin becomes white and soft.

The dressing is soothing. The zinc oxide which it contains gives it this soothing quality, and, in addition to the support which it gives to the blood-vessels, it does away with the stretching of the nerves in the walls of the blood-vessels which causes the characteristic burning pain observed in cases of varicose veins.

THE TREATMENT OF BRONCHIAL ASTHMA.

The *Boston Medical and Surgical Journal* of March 25, 1897, contains an article by FREDERICK I. KNIGHT devoted to this subject. After discussing the various views of asthma in regard to its pathology he considers its treatment. He thinks the simplest remedies, and those attended with the quickest relief, if relief comes at all from them, are those which are taken by inhalation. They all act more or less by exciting secretion, and most of them by relaxing spasm also. Some act well in one case, and some in another; and those remedies which have most success are usually combinations of various drugs. Nitrate of potassium, stramonium, belladonna, hyoscyamus, and arsenic are found in variable numbers and proportion in most of the powders and cigarettes in the market. One drug or one combination affects one, and another another; and only trial will decide which is best for any particular case.

If no relief comes from such inhalations, then the milder internal remedies may be tried. Phenacetine and other remedies of its class may give relief. Strong coffee or hot alcoholic drinks may suffice. If necessary we proceed to less simple measures, such as the inhalation of ethyl iodide, or the amyl nitrite, or the internal use of nitroglycerin. The latter drug is very efficient in the relief both of spasm and hyperemia. A large proportion of cases recover quickly on the combined use of potassium iodide and nitro-glycerin. Unfortunately the system soon becomes very tolerant of the latter, and the doses have to be constantly increased.

If still more powerful measures are called for, then those agents must be used which have a profound effect in diminishing the irritability of the nervous system. The hypodermic injection of morphine and atropine is one of the best, and will usually give relief, though the writer has seen a case, which always resisted morphine, yield readily to the inhalation of chloroform. The use of chloral, which often gives speedy relief, is to be avoided, if possible, on account of the very depressing after effects. The writer again warns against the use of any but the simple remedies for the paroxysm, unless absolutely required.

We now come to the treatment of patients in the intervals, to the treatment of the underlying conditions which, singly or combined, cause the attacks.

The first factor to which the writer has directed attention is the condition of the lungs and bronchi. As stated, a previous inflammatory condition exists in many, according to some authorities in a very large majority of cases. In some we have physical evidence of a chronic bronchitis. It is in these cases especially that the potassium iodide gives so much relief, either as an absorbent or as an alkali, increasing and thinning the bronchial secretion. Certain it is that this remedy when properly given relieves and cures more asthmatic patients than any other one. Sometimes, no doubt, the relief comes from its action on enlarged glands which compress the vagus.

The potassium iodide should be given in doses of from five to sixty grains, if needed, for a thorough trial, unless contraindicated. The syrup of hydriodic acid is sometimes useful, but needs to be given in larger doses than those usually prescribed. The dose should be from a dessertspoonful to a tablespoonful.

This is not nearly so efficacious as the potassium iodide.

In case of derangement of the stomach the writer has found the sodium iodide and strontium iodide better borne. He has lately used the latter a good deal, and finds that it is much more acceptable to the patient. All of the iodides should be given largely diluted, on an empty stomach. The writer usually gives them ten or fifteen minutes before meals. The continued use of the nitrites, either alone or with an iodide, when that is indicated, is of great benefit. Nitroglycerin may be used, but the nitrite of sodium has a more lasting effect. The dose of this drug given in many books is too large, one or two grains being usually enough, and large doses dangerous.

In case of emphysema, strychnine is useful; also expiration into rarefied air.

The second factor on the list is pressure on or hyperesthesia of the vagus nerve. As said, potassium iodide may act favorably on enlarged glands which press on the vagus. The same is true of arsenic, which is also a good nerve tonic and is said to act favorably on the bronchial mucous membrane. Practically arsenic has shown itself of great value. Other nerve tonics are indicated, especially quinine, which in large doses may even abort a paroxysm.

The removal of the direct irritant is possible in many cases, and efficacious in preventing the paroxysms, though hyperesthesia of the nervous system may be a prominent symptom. Feather beds, animals, kerosene lamps, arsenical wall-paper, various kinds of dust, and many other objects, when found to be excitants, may be easily removed; but others cannot be, and yet it may be possible to remove the patient from them, as in the asthma of autumnal catarrh or other less defined climatic or atmospheric conditions. Certain regions of this country are known to be exempt from all of the symptoms of autumnal catarrh, asthma included.

In other cases the atmospheric condition which provokes the attack is not so well defined, and relief may be obtained only after repeated changes. The slightest change in location will sometimes give relief. More patients get relief by going from the country to the city than from the city to the country. A curious feature of the immunity of location is that in time it often fails, and another change is necessary. The author recalls the case of a physician who changed his residence and practise several times during his life, on account of asthma, and who finally got relief by going back to the place from which he started.

In making any change consideration must, of course, be paid to the probable effect of the climate on other factors—for example, on the condition of the lungs and bronchi and on the nervous system.

Of peripheral origin of reflex irritation the nasal region furnishes a good many cases, so many that the digestive and other important regions have recently been too little investigated. The nasal polyp is easily recognized, and so usually are other morbid conditions which are likely to set up reflex action. Contact of a turbinate bone with the septum may be a source of great irritation, less frequently chronic disease of the turbinates, tonsils, pharyngeal-adenoid, etc. The whole naso-pharynx must be put in as healthy a condition as possible.

The digestive derangements have been in recent years far too little considered. Indigestible food, especially when taken at night, is often the cause of an attack; though other factors may be present, it is this added irritation which determines the paroxysm. The digestive tract is so much under our control that it is very important to regulate the quality and quantity of food and time of meals, and perhaps also to treat some evident morbid condition. The intestinal tract must be investigated, especially for parasites. The sexual system and possible trauma must be considered.

No study of an obstinate case is complete without the consideration of toxemia. Lead and arsenic should be sought, and especially should the lithemic condition be looked for. An antilithic diet, regimen, and medicine will relieve many otherwise incurable cases. The same is true of the appropriate treatment of malarial cases. In cases of renal dyspnea due to uremic intoxication there is sometimes an apparent increase of suffering, due perhaps to spasm of the bronchi, as indicated by sonorous râles; but it is better not to consider these cases under the head of bronchial asthma such as we have been considering.

It will be seen from this brief sketch that many morbid conditions may be concerned directly or indirectly in the production of a case of bronchial asthma, which act singly or combined, and that the treatment should be directed towards the removal of as many as possible of these conditions. The result will be more satisfactory the nearer we get to a removal of all of them.

The more of these factors we can diagnosticate the simpler may be our treatment. Grand combinations of many drugs either for inhalation or internal use are to be avoided unless single remedies fail. Patent and proprietary medicines, and treatment of patients at a distance without examination for differential diagnosis, must naturally be compound, including everything known to be "good;" but when a physician can have his patient under observation this can often be avoided. In conclusion, the influence of climate is often very subtle, yet if we proceed on the same lines as have been suggested for medicinal treatment, of considering what factors we may influence by change of climate, we may yet often guide a patient successfully. Can we remove him from some direct irritant, as in the hay-fever cases? Shall we find a climate which will fortify or calm a hyperesthetic nervous system? Or shall we (which is perhaps oftenest required) put him in a climate which will act favorably on his bronchial inflammation? If we wish to do the latter, a dry, elevated region is indicated if the bronchitis is moist, but a warm, moist climate will probably be better if the bronchial mucous membrane is dry and irritable. As in all other means of treatment the nearer we get to an exact diagnosis of the exciting and underlying causes of asthma, the more intelligently and successfully will we be able to advise in regard to change of climate.

SIXTEEN YEARS' EXPERIENCE IN THE TREATMENT OF SYPHILIS BY THE HYPODERMIC INJECTION OF BICHLORIDE OF MERCURY.

In the *New Orleans Medical and Surgical Journal* for April, 1897, DABNEY contributes a valuable analytical paper on mercury by the hypodermic needle. In its close he weighs the objections and advantages of the treatment by subcutaneous injections.

The objections raised against the method are: (1) Unnecessary pain; (2) subcutaneous infiltration; (3) large indurated and painful swelling; (4) inflammation; (5) abscesses; (6) stomatitis; (7) ptyalism; (8) disturbances of circulation and respiration.

That pain does occur in some cases cannot be denied; but as a large majority of syphilitics suffer from partial or complete cutaneous anesthesia, this objection holds good but in comparatively few cases.

In hyperesthetic cases it is hardly admissible and cannot be recommended. In sixteen years' experience the writer recalls but three cases where pain acted as a deterrent factor —one boy and two neurotic women. In every other case the patients maintained that the pain was less objectionable than the taste of medicines. The addition of alcohol, recommended by some, adds much to the pain and detracts from the efficacy of the bichloride.

Injection of morphine before or in conjunction with the mercury is to be condemned for two reasons: because it in no wise alleviates the pain, which does not reach its acme for three or four honrs; and it may lead to the opium habit—highly probable in this class of patients.

What objection there can be to cellular or subcutaneous infiltration the writer is at a loss to understand. We use the loose cellular tissue as a storehouse whence the mercury is slowly given off. The indurations are painful when roughly handled, just as those of vaccination are, though he has yet to hear that objection raised to preventive measures of smallpox, and why should it be a valid objection to curative measures of pox? When the needle is not plunged deep enough, quite an area of inflammation is, in some instances, set up.

It has been the writer's misfortune to cause two shallow abscesses, but in each instance the abscess was due to neglect of asepsis, and not to the injection of the greatest of all known antiseptics. He has also broken off a needle in a man's arm. This needle caused no inconvenience whatever.

So far he has seen no untoward circulatory or respiratory disturbances, unless the increased pulse-rate and the rise in the cutaneous temperature which always accompanies the continued use of mercury could be classed under that head. Ptyalism and stomatitis may unquestionably be produced by the administration of mercury in any manner; but he happens never to have witnessed those lamentable effects in any case treated hypodermically; whereas he has rarely seen a case treated by other methods without them. At Hot Springs tincture of myrrh for the mouth and gums is almost as important a part of the treatment as the inunction of mercury and the large doses of the iodide.

The advantages claimed for this method are: (1) accuracy of dose; (2) exactness in intervals between doses; (3) rapidity of action of medicine; (4) small amount of mercury and the short time needed to effect a cure; (5) the constant, never-ceasing effect of the mer-

cury day and night; (6) the personal supervision of the physician; (7) the certainty of the patient getting the right medicine, of its being properly administered at regular stated intervals, and of his inability to get the prescription refilled, or to give the knowledge to a friend, or sell it to some charlatan; (8) profit to the physician and economy to the patient on account of the saving of the drug bill of four years. The doctor with this method is sure of two very important things: his fee, and his patient's gratitude for his speedy cure—quick delivery, so to speak; (9) absence of gastro-intestinal disturbances; (10) last, though not least, quick diagnosis in questionable cases.

The modus operandi is as follows: First, care must be taken to avoid all joints, glands, and blood-vessels. The best sites for the injection are the chest-walls, back, gluteal region, and the upper and outer portions of the arms. The site chosen should be well soaped (green soap) and washed and dried, then rubbed briskly for a few seconds with alcohol. The needle and syringe should be immersed in hot water before each injection. The needle should then be plunged quickly through the skin and well into the cellular tissue, care being taken to avoid invading adipose or muscular tissue (though some authorities advise deep muscular injection). The injection should be very slowly made, care being taken not to use too much force. As soon as the bichloride solution comes in contact with the albuminous serum, the soluble mercuric chloride immediately becomes the albuminate, which is not very soluble, and herein lies the efficacy and safety of these large doses of this highly corrosive poison. By means of this chemical metamorphosis we can store up in the cellular tissue mercury that can be taken up by the secretions and distributed throughout the entire system in such dilution as to do no harm to the most delicate structure. How different is the result, say, when given by the mouth in pill or solution. Here the medicine coming in contact with the daily ingesta may form insoluble combinations and pass through the bowels as an inert mass, or it may, through the presence of malic, lactic, citric, or other acid, form highly soluble or irritant salts, and thus bring on free catharsis, and be swept away before reaching the systemic circulation. One of the most striking effects of the hypodermic injection of the bichloride is the way it tones up old, broken-down syphilitics. This tonic effect is at times so strikingly shown as to cause surprise to the patient as well as to the physician.

This treatment does not entirely do away with the iodide of potash, for this remedy, though it never cures but only subdues, may after be used in conjunction with the injections, especially where the throat, brain, or spine are involved. Wherever mucous patches occur he applies the solid argentic nitrate. Sulphate of copper crystals are highly recommended by many authors, but they are not as quick nor as efficacious as lunar caustic.

The writer feels that he has in this treatment a scientific, accurate, rapid, and absolutely safe method of mercurializing his patients and of keeping them under the never-ceasing influence of mercury as long as a vestige of syphilis remains. He no longer dreads to face a syphilitic seeking his advice, for he feels absolute confidence in his ability to cure him in a definite time.

THE PRE-DIAGNOSTIC TREATMENT OF GRAVE ABDOMINAL DISEASE.

G. SMITH in *Treatment* of March 25, 1897, writes on this very important practical topic and points out that acute abdominal disease cannot always be diagnosed offhand. Often the diagnosis must wait, but rarely is the treatment permitted to wait; and this treatment, directly aimed at the relief of symptoms as it is, may succeed only in aggravating the disease, while it makes diagnosis almost impossible. It is true that with the general public the relief of suffering comes before the cure of disease, and the action of the kindly physician who, seeing pain, relieves it with his morphine syringe, will never be severely condemned. If the patient is thirsty he will have ice to suck; if his heart's action is feeble and rapid he will have suitable medicines and drinks administered by the mouth.

Then comes in the surgeon, who is requested to cure the disease. Now for surgical purposes some sort of diagnosis is desirable; and diagnosis in grave abdominal disease is simply impossible if the patient is narcotized. Also operative treatment is dangerous and difficult in these cases, and it does not add to the too slender chances of success if liquids have been poured into a perforated stomach, or the intestines have been either started into furious action by iced fluids drunk or paralyzed by morphine injections.

What then is to be done? Is it possible in such cases to pursue a course of treatment

which will certainly do no harm, but will probably do good, and which will not obscure the signs and symptoms, but will rather help in their evolution and interpretation?

We will suppose a patient in ordinary health up to the moment of attack; the physician finds him in bed suffering great pain and with the ordinary symptoms of serious abdominal disease. It may be impossible to say whether it is simply colic—intestinal, renal, or biliary—or some grave condition such as obstruction or perforation of a viscus, or even extravasation of blood. The shock may be caused by pain and fright; it is very like true collapse such as might be produced by peritoneal diffusion of the contents of a perforated stomach, or of a periappendicular abscess, or by the rupture of a tubal pregnancy.

The first thing to be done under these circumstances is to administer an enema containing an ounce of brandy or whiskey. The brandy is best given in milk, which the rectum tolerates, and about three ounces of milk is enough. Before giving it the rectum is explored with the forefinger, and the evidence, positive or negative, thus afforded is treasured up towards the diagnosis. As the finger is withdrawn the nozzle of the syringe is inserted, almost by the same act as the examination is made, and the enema administered.

Then the patient is swathed in hot blankets, one being rolled round each leg, and one, pulled under his back, is rolled round his chest. Hot-water bottles are packed around limbs and body. The abdomen is left to be covered separately by some light woolen wrap, which can be easily removed so as to permit of examination of the surface. The attendant now sits down by the bedside of the patient to watch him and to complete the diagnosis; and he ought scarcely to leave his side till the diagnosis is complete.

Meanwhile the alcohol and the warmth are doing their beneficent work. The pulse improves; color comes into the patient's cheeks and lips; excitability and nervousness are diminished; pain is probably lessened; and soon the surface is covered with warm perspiration. No single therapeutic measure with which I am acquainted does so much good in the early stages of grave abdominal disease as rectal injection of alcohol. It is indeed a fortunate thing for the patient that, while the whole of the rest of the intestinal tract is paralyzed and useless, the rectum still retains its power of passively absorbing liquids.

The surgeon sitting by the patient intently watches the evolution of signs, and uses such aids in palpation, percussion, and especially in auscultation, as he thinks proper. Every individual sign is noted and kept in mind as it is evolved; and it will be surprising if, at the end of half an hour, their aggregation does not permit of a diagnosis being made sufficiently accurate for exact treatment.

The general behavior of the patient is important. In spasmodic colic—intestinal, renal, or biliary—the patient makes a great fuss; he is in acute pain, and he lets every one know it, calling out and rolling and twisting about in all directions. Very differently behaves the patient with visceral perforation; he makes little fuss and no complaint; he keeps his body rigidly still; his arms only does he move, bending and stretching and raising them, while he rolls his head wearily from side to side. Between the two are the intestinal strangulations with their special signs. The condition of the parietes as to tension and distention, spasm or relaxation, is carefully noted, and the movements or quiescence of the intestines are observed. If the intestinal muscle is acting violently there is no perforation, for intestinal paralysis is one of the first effects of diffusion of fluids in the peritoneum. All over the abdomen there is silence to auscultation, save at the seat of perforation, where there are rare and mysterious blowing or rushing sounds. In the parietes we must distinguish between tension and distention, between hardness from reflex or voluntary muscular spasm and hardness from physical stretching, giving each variety its true meaning; and intermittently we percuss, especially over the region of the liver. If there is not much distention, abrogation of the liver dulness is almost pathognomonic of perforation and escape of gas from a hollow viscus or from rupture of an abscess which contains gas—such as an appendicular abscess. If there is much distention, so that bowels may get between liver surface and parietes, this sign is of less value. But the abdomen takes long to distend; the parietes get very tense before they stretch in acute disease.

The sign revealed by auscultation may be of great value. The disk of the phonendoscope is laid on the parietes and moved about from place to place, while sounds are patiently listened for. It must not be forgotten that intestinal sounds are not like cardiac or pulmonary sounds, repeated rhythmically so many times a minute; on the contrary they may occur only at long intervals, and recur with no measurable regularity. To

attempt to describe these sounds would be to go beyond the scope of this paper. It is always possible to be certain of the natural and diffuse sounds in colic; of the exaggerated local and rushing sounds in obstruction; and of the curious general silence with rare and remote noises in perforation. They must be heard again and again, and listened to long, before one can be certain of their meaning.

We shall now be in a position to say whether it is colic or dangerous disease. The final diagnosis may be made with the help of chloroform. The patient is given a little chloroform to inhale; if it is simple colic he greedily inhales it, delighted with the relief it gives; in a few minutes the marked improvement of the patient's condition will almost prove the diagnosis. In perforation or strangulation the patient is not greedy to inhale the chloroform; it may increase the nausea, and it does not cause marked improvement in the symptoms. When we have decided that the disease is no more than colic we may at once give a full dose of morphine and begin the proper treatment, of which no more need here be said. By the time that half an hour has passed the diagnosis will have gone so far that the decision for or against operative interference will have been made. Preparations for operation are rapidly made by assistant and nurses, while the surgeon stays by the patient's side to continue to read the signs and make the diagnosis complete. His aim will now be chiefly to locate the mischief so as to know where to make the abdominal incision. It matters little to the surgeon what has to be done; it matters greatly to the patient that it should be done quickly and deftly; and one essential of speed and excellence of opening is that the parietal incision shall be well placed.

It will be seen that the author places in the front these items of advice: Avoid morphine; give nothing by the mouth; give an enema containing a full dose of alcohol; and apply heat to the patient's body. Then we sit down and watch. As shock passes off the natural evolution of special signs comes on. These we carefully and patiently observe by sight, touch, and hearing, and their interpretation is the diagnosis. But their evolution being slow and complex, and their meaning often obscure, we must wait while they repeat themselves again and again, and not leave the patient's side till solid reasons have been found for a definite line of treatment.

TREATMENT OF ACUTE MYELITIS.

JAMES TAYLOR writes on this topic, which is seemingly dealing with a barren therapeutic field, in *Treatment* of March 11, 1897. He thinks that in such a condition the object of treatment will be to prevent, if possible, the extension of the mischief upwards or downwards from its original focus, and also to prevent any of the paralytic effects of the disease from becoming a danger to life. The effects, which are apt to be troublesome and dangerous even if no extension of the original inflammation takes place, are: (1) trophic disturbance; (2) retention of urine, and cystitis leading to kidney affection; and (3) in a minor degree, constipation and abdominal distention. With reference to the first of these it should be recognized from the commencement that very serious trophic disturbance may arise from very slight pressure, and in some cases apparently arises spontaneously. A careful watch must be kept for the slightest appearance of any such change, and the parts on which pressure comes must be carefully and frequently sponged and spirit rubbed into them with the palm of the hand. It is essential in every case of acute myelitis that a water-bed, or at least water-pillows, should be used, and that great care should be taken to avoid anything likely to irritate the skin or permit an abrasion. It has been recommended that the patient should assume the prone position in order to prevent the spinal cord from being dependent. In the acute stage of the illness, however, such treatment is seldom, if ever, possible. It is often most useful in the later stage when the fever and malaise have subsided, and it is of special value if any bedsore has unfortunately developed. If such a position is advisable it is best to have a prone couch close to the patient's bed, to which he can without inconvenience be occasionally moved for an hour or two at a time.

The second inconvenience, and even danger, which is apt to occur at an early stage is in connection with the loss of control over the bladder. Retention of urine takes place, and the patient may first become aware of the fact that everything is not in order by the dribbling away of urine, the sequel to overdistention. Such a condition is usually spoken of as "overflow incontinence." It is sometimes said that even in these cases cystitis does not occur except as a result of infection by a dirty catheter. This, however, is not correct, for cystitis may occur in certain cases of acute myelitis even before a

catheter is passed. Nevertheless it is of the utmost importance that extreme care should be exercised in regard to the condition of the catheter, and not only should the urine be drawn off, but the bladder should be washed out by means of a solution of a mild antiseptic like boric acid. After a time, if the case goes well, the bladder is likely to regain its power of contraction, so that it is able to empty itself wholly or, more usually, partially, not in obedience to the volition of the patient, but reflexly. Such a condition is spoken of as "reflex incontinence" to distinguish it from the overflow incontinence already alluded to as occurring earlier. Even in this condition it is desirable that the catheter should be passed at least twice in twenty-four hours, and also that the bladder should be washed out, for in probably every case it never empties itself completely. In the stage of complete retention the catheter should be used once in every six or eight hours. It may be occasionally necessary to use it even more frequently.

The condition of the bowels is a third source of possible inconvenience. There is always considerable difficulty in getting them to act, and there may ensue an inconvenient degree of abdominal distention. The constipation in many cases seems to be diminished by belladonna—one-sixth or even one-fourth grain of the extract twice daily, in pill. Enemata are often ineffective, because they are not retained; but glycerin is more efficacious than the fluids, which have to be given in larger quantity. For the distention gentle rubbing of the abdomen may be done. Purgatives also are useful in relieving the distention, but in some cases it may be necessary to pass a tube through the rectum into the colon.

Can anything be done by drugs to allay the inflammation or to prevent it from spreading? Ergot and belladonna have both been recommended, and their use in some cases has been followed by improvement. Strychnine is certainly contraindicated while the condition remains acute. Absolute rest, light fluid diet, careful attention to the skin, the bladder, and the bowels, really sum up the treatment in the acute stage of acute myelitis. Any form of counter-irritation is inadmissible, because of the danger of starting trophic disturbance.

When there seems to be no further danger that the inflammation is extending, iron and quinine may be given in small doses, especially if, as is often the case, some anemia is associated with the myelitis. The diet also may gradually be made more liberal, and a little stimulant may be added if the patient takes his food badly. Counter-irritation to the back may now also be employed, and by far the best method to use is that by means of the Paquelin cautery. Several pricks should be made each day by means of the heated round blade on each side of the spine, at and about the level at which the sensory impairment stops.

The reflex action, if no extension to the lumbar enlargement has taken place, will now have returned, and it quickly becomes excessive. It is often necessary to strap the limbs with soft voluminous bands such as knitted woolen shawls, and pillows will sometimes have to be placed between the limbs to prevent them touching and perhaps abrading each other. But as a voluntary action returns the reflex movements become less, and when this stage has been reached massage and passive movements are of considerable use in improving the nutrition of the muscles and in strengthening the various movements in the limbs. As soon as the patient is able to walk a little great care will have to be taken to prevent him from overdoing the exercise. The bladder trouble not infrequently persists even after the patient is able to walk well. When this is the case strychnine in small doses has a very distinctly beneficial influence, but it should be used cautiously on account of the possibility that it may induce a recurrence of the excessive reflex action. In some cases arsenic and chloride of aluminum seem to have a tonic influence on the affected nervous structures, and it may be stated generally that the degree of recovery in many cases of acute myelitis is far greater than one would expect from the nature of the disease and its apparent extent at the onset of the attack.

ON THE ACTIVE PRINCIPLE OF RHUS TOXICODENDRON AND RHUS VENENATA.

FRANZ PFAFF concludes in a very interesting paper in the *Journal of Experimental Medicine* for March, 1897, that as to the rational treatment of Rhus poisoning, it is to be noted that the poisonous oil, as we have already repeatedly stated, is non-volatile. It is very sticky and will cling persistently to parts which may have become contaminated with it. It oxidizes in contact with air and is transformed into a solid resin. But this proc-

ess is a very slow one. This resinification of the oil may be hastened by heat and alkalies, even by a solution of carbonate of sodium; but still the process remains a very slow one. The metallic compounds of the oil, after decomposition, leave again the oil with all its irritant properties. The poisonous oil is soluble in most of the common solvents and fatty substances, but is insoluble in water.

From all the chemical properties just enumerated, the rational indication in a case of Rhus dermatitis would be to get rid of the poisonous oil that may still be on the skin of the affected person as quickly as possible, no matter in what stage the eruption may be.

This can be done by vigorously washing the affected and exposed parts with soap, water, and scrubbing-brush — that is to say, mechanically. As the active principle is very soluble in alcohol and gives with lead acetate a precipitate which is nearly insoluble in alcohol (the copper and iron compounds are also easily obtained as precipitates), other processes may be employed to remove the oil. The exposed parts may be washed repeatedly with fresh quantities of alcohol and a scrubbing-brush; the poisonous oil would be thus removed in alcoholic solution. Or still another way of operating would be to wash the exposed parts with an alcoholic solution of lead acetate. In this case the poisonous principle would be first transformed into its insoluble lead compound and then washed away with alcohol. The washing must be done thoroughly when alcohol is employed, as otherwise the alcohol would only help the spreading. The nails have to be cut short and also perfectly cleaned with the scrubbing-brush. Oily preparations, or anything which dissolves the poisonous oil, if used and not immediately removed, would only spread the poison, giving it a larger area on which to work. This spreading was well seen in one patient's case. The vaselin ointment used in the treatment dissolved the oil which adhered to the point of application, and thus caused the spreading of the eruption. That the proposed treatment does not cure the already inflamed parts is self-evident.

How can the commonly accepted idea be explained that poisoning may occur without actual contact with the poisonous plants when the active principle is a non-volatile substance? The activity of toxicodendron in minute traces may make it possible for a few pollen grains of poison ivy to cause skin eruption; and the few cases of action at a distance, which are so often quoted, may conceivably be thus explained. But in the writer's opinion it is more than doubtful if ever a case of ivy poisoning has occurred without direct contact with the plant or some article which has been in contact with the plant. The long latent period of the eruption in some cases may obviously render mistakes extremely easy as to the occasion when contact with the plant really occurred.

PREPARATIONS OF IRON IN THE TREATMENT OF CHLOROSIS AND ANEMIA.

At a recent meeting of the Société de Thérapeutique, a report of which appears in *Le Progrès Médical* of April 3, a discussion on this subject was opened by M. Bardet, who said that the majority of authors regretted that it had been generalized by including in it the treatment of various forms of anemia, instead of limiting it to chlorosis. M. Bardet, however, was of the opinion that when it was necessary to employ iron preparations the special treatment became the same in chlorosis as in simple anemia. He considered it difficult, in a discussion on therapeutics, to separate chlorosis, properly so called, and the various forms of anemia. It has been well said that in the treatment of anemia the principal indication was to suppress the cause and then the anemia would disappear. But, he said, it was none the less true that the iron treatment of anemia played a great part in therapeutical intervention, and consequently it would be prejudicial to leave out anemia in a discussion on iron treatment. Moreover, he questioned whether it was correct to profess to be able to remove the causes, which were more frequently connected so closely with the effects that it was impossible to make out the precise limits between the cause and the effects.

The value of different preparations of iron had been the subject of much discussion. Some authors had advocated the use of the free metal; others had recommended the iron salts; others, again, had given the preference to organic preparations, and among these several authors had adopted exclusively the albuminates. M. Bardet was convinced that all these discussions were useless, and that all iron preparations were good or bad according to the particular cases, not forgetting that everything depended on the absorption, and that this was itself dependent exclusively upon the digestion; and as this was a most complex phenomenon, varying according to the individual, certain preparations might

prove good for some persons and bad for others. All iron preparations might be tried, and the one that was tolerated by the patient would be the right one.

With regard to the different preparations of iron, M. Bardet preferred hemoglobin, although there was another preparation which he thought should not be forgotten in a discussion on this subject. This was glycero-phosphate of iron, which he thought was destined to take an important place in therapeutics. Up to the present time it had not been easy of employment, owing to the difficulty in keeping it. M. Bardet, however, had made use of this salt in anemic persons by combining an organic iron preparation with the glycerophosphate of iron and particularly with the phospho-glycerate of lime. He had employed these combinations for the past three months with the best results.—*New York Medical Journal*, May 1, 1897.

MALARIAL HEMATURIA.

In the *New York Polyclinic* of April 15, 1897, KILPATRICK writes on this important subject as follows:

The real cause is undoubtedly malaria, and in this section (Georgia) it is confined strictly to the white race. He has never known a negro to have it.

At the onset the writer finds the symptoms to be as follows: The patient is taken with a chill, not very decided in every case, and of short duration. He may be attending to his duties and is not necessarily confined to bed. At the expiration of these chilly sensations there is a rise in temperature ranging from 101° to 103°. About this time he desires to micturate, the urine being of a dark coffee color, or perhaps a cherry red, and sometimes very copious. The quantity voided is about half a pint, often less. The patient does not seem to experience any pain while voiding urine other than a dull, aching sensation in the region of the kidneys. The fluid has been submitted to a microscopical examination and found to contain no blood-corpuscles. There is often at the onset intense nausea and vomiting, and at the expiration of six or eight hours, sometimes earlier, decided jaundice and cold feet.

The indications are for purgation and diuresis. The author gives large quantities of warm water; lets the patient drink all he can, and so distend the stomach as much as possible. After a thorough washing in this way he lets him sip very hot water to relieve the irritated stomach, and places a mustard plaster over the epigastric region. He then receives an enema consisting of a quart of warm water with the yolk of one egg and ten drops of spirits of turpentine. Hot-water bottles are placed to his feet. If vomiting is not controlled by this time, he gives, in capsules, half a grain of cocaine hydrochlorate every half-hour till a grain and a half is taken. The purgatives and diuretics seem to control the temperature. As a purgative he gives from ten to twenty grains of calomel with the same amount of bicarbonate of sodium every hour till he gets copious, dark stools. As a diuretic he uses potassium acetate every half-hour to every hour till the urine resumes its normal color. When this occurs he feels that his patient is safe.

The after-treatment consists in giving three times a day ten drops of a mixture of tincture of nux vomica and Fowler's solution, equal parts. If the patient is very anemic, he adds tincture of chloride of iron. After the skin clears up he gives three or four grains of quinine bimuriate three times daily.

The duration of this affection is very short, but it requires prompt and heroic treatment. The main point is to keep the kidneys and bowels acting freely. His reasons for not using quinine are that it often keeps the stomach upset and that it is so slowly assimilated there is not sufficient time to wait for its action. He uses no hemostatics as the urine, no matter how red, does not contain blood-corpuscles unless there are organic lesions about the kidneys or the urinary tract.

The temperature and circulation will take care of themselves if the system is rid of its engorgement of cells broken down by malaria.

BRONCHOPNEUMONIA OF CHILDREN.

A practical article on this topic is contributed to the *Northwestern Lancet* of April 15, 1897, by CARLAW of Minneapolis. After considering the disease from various standpoints he turns to the treatment and gives useful advice. He admits that there is as yet no specific treatment, but thinks much may be done for the comfort and guidance of these little sufferers in their struggle for life. First and foremost is the hygienic management. The child should be placed in a good-sized room, where there are ample facilities for admitting air and sunlight. The cot or bed should not be placed against an outside wall, if the season be winter. Unnecessary furniture would better be removed. The clothing of the cot

should be light, clean, and warm; sheets may be discarded for soft flannel blankets. The child should be attired in flannel nightgown, preferably of the "combination" variety. The bedclothing and nightclothes should be kept clean, and changed and aired daily.

The temperature of the room should be maintained day and night from 68° to 70° F. Free and constant ventilation should above all other things be obtained, and its maintenance be rigidly insisted upon. This is best accomplished by lowering a window from the top, which will allow the free ingress of fresh air. If a fireplace be in the room and in working order, it is well to keep a fire in it, as it is one of the best means of ventilating and carrying off impure air. The air in the room may be kept moist to advantage, preferably with the steam of boiling lime-water. The attendants on coming in from the outside air, if the weather be cold, should warm themselves before going near the patient. The physician should do likewise, and should warm his stethoscope and hands before examining the chest.

Attention to the countless little things which promote the comfort of the little one is most important, such as changing the child's position frequently, drying its skin with a soft warm towel, keeping the mouth clean, etc.—or, in other words, "good nursing." In many places among the poor such hygienic measures cannot be carried out as well as we would desire, but the best possible under the circumstances should be insisted upon, and we must always remember that medicine can never take the place of hygienic treatment.

For those who are artificially fed milk is the ideal food; it should be given with lime-water. It is best to feed the child at regular intervals, say every two hours. Albumen water, made by mixing the whites of two eggs with a pint of water and adding a little salt, will be found very nourishing and may be given ice-cold. Older children should have animal broths in addition to milk. Cold water should be constantly on hand and the child encouraged to drink freely. Stimulants in severe cases should be given from the first, and good rye whiskey is one of the best forms to administer. It may be given in the egg-albumen water, and its dose will vary with the age of the patient and severity of the disease.

In mild cases a well fitting cotton-batting jacket, lined on the inside with cotton flannel and on the outside with oil silk or oiled muslin, will be sufficient. The chest may be first rubbed with some stimulating oil or liniment, such as two drachms of oil of turpentine and one drachm of the stronger solution of ammonia, in two ounces of soap liniment. In severe cases where the cough is painful there is nothing that will give the relief and satisfaction of the time-honored flaxseed poultice.

As little medicine as possible should be given, and all medicines of a depressing nature avoided. The bowels may require to be moved at the onset, which may be done with small doses of calomel, but we must be careful in regard to purgatives, especially in cases following measles, as they are apt to set up gastro-intestinal complications.

In the early stage, if the cough is dry and the bronchitis troublesome, as indicated by a preponderance of dry râles, some alkaline cough mixture, as one or two grains of nitrate of potash, with ten or fifteen minims of syrup of ipecac, given in equal parts of liquor ammonii acetatis and syrup, or fluid extract, of licorice, to one teaspoonful, for a child two and a half or three years old. Such cough mixtures should be given freely diluted with water.

When the cough is loose and moist râles more abundant, the ammonium salts will be found efficient. Some prefer the chloride, others the carbonate. When the acute symptoms are present the carbonate is perhaps more indicated. This salt is not only an efficient expectorant, but also a valuable cardiac and respiratory stimulant, all of which actions are indicated in the treatment of bronchopneumonia. It can be combined to advantage with vinegar of squills and given in the fluid extract of licorice, which disguises its taste most efficiently. The dose will vary with the age; for a child fifteen months or two years of age, one grain of the carbonate with fifteen minims of *acetum scillæ* given every two hours will generally suffice. Later in the disease the chloride may be substituted, which has an alterative effect and tends to lessen the secretions of the bronchial mucous membrane, and during its use digestion usually improves.

Strychnine is also a valuable respiratory stimulant and heart and systemic tonic, and is of undoubted value. In desperate cases its judicious hypodermic use is superior to all other known remedies, and has many times turned what seemed a hopeless case to recovery. In all such cases it is the remedy *par excellence*.

Cough rarely requires treatment, and should not be stopped, as it is the only way a child

has of cleansing out its bronchial tubes and preventing collapse.

We must be guarded in giving opiates to allay pain. As a rule flaxseed poultices will generally be found sufficient; if not, compound tincture of camphor may be added to the cough mixture, or Dover's powder may be given.

If there is dyspnea due to obstruction of the bronchial tubes from accumulated mucus, an emetic should be given. In weak and debilitated children these should be used cautiously. Ipecac is perhaps the safest and most frequently used emetic. In older and stronger children turpeth mineral by the mouth, or apomorphia hypodermically, are recommended. When the dyspnea comes in paroxysms, and is not due to obstruction of the bronchial tubes with mucus, there is no treatment equal to the hot bath. The temperature of the water should be about 100° F., and the child allowed to remain in the bath for ten or fifteen minutes, then wrapped in a woolen blanket.

As a rule children bear high temperatures without the rapid prostration observed in adults. Even a temperature of 104° or 105° F. does not always call for antipyretic drugs. The fever of bronchopneumonia seldom calls for special treatment, but should it do so there is nothing better than the general bath with water at 100° F., gradually lowered to 80° F. or lower. The bath may be repeated several times daily if required. The coal-tar antipyretic drugs must be used with caution. The bath is much more to be preferred than dosing with antipyretic drugs, as it not only lowers the temperature effectively, but also acts as a general tonic, and tones up and refreshes the child, and is usually followed by refreshing sleep.

Collapse requires bold and energetic treatment, hypodermics of ether, brandy, and strychnine. The latter may be added to the brandy or ether, whichever is chosen. A douche of cold water to the nape of the neck will usually cause violent inspiration followed by vigorous coughing, even though a high degree of carbonic acid poisoning be present.

Another way of treating these cases is by mouth-to-mouth inflation. When the breathing becomes improved the child may be wrapped in a sheet wrung out of hot mustard water, within a flannel blanket. Plenty of fresh air should be allowed. Some recommend the child being wrapped in a sheet wrung out of ice-cold water, a flannel blanket on the outside, which stimulates the nervous system and improves very markedly the general condition.

In cerebral cases the main remedies to rely upon are the hot bath, chloral by the rectum, or the bromides and hyoscyamus by the mouth.

Careful regulation of the feeding during convalescence must be observed. If hypersecretion of the bronchial mucous membrane continues oil of turpentine will often be found beneficial, or syrup of the hypophosphite of lime. Later, cod-liver oil and iron will be found of service, but before these are given we must see that the digestive organs are able to take care of them; if not, they had better be preceded by a short course of muriatic or nitro-muriatic acid, with tincture of nux vomica in some of the vegetable bitters, as the infusion of calumba.

Cod-liver oil may be used by inunctions in young infants to advantage. The syrup of the iodide of iron is perhaps the best iron preparation to use. If the bronchial glands are enlarged they are best treated with muriate of ammonia or syrup of hydriodic acid.

Caution should be exercised in guarding against exposure to cold and damp for a long period after apparent recovery has taken place. When able to be moved, a change of air is above all things the best, especially from the city to the country.

STEAMING THE UTERUS IN SEPTIC CONDITIONS FOLLOWING ABORTION, ETC.

Some months ago we presented the substance of an article on this subject by Dr. Ludwig Pincus, of Dantzic. In the *Centralblatt für Gynäkologie* of February 20 that gentleman has a further communication on the matter. He reports the results in ten additional cases of sepsis following abortion. In five of them the fever disappeared speedily by crisis, in two lysis occurred, and in three there was no notable fever to begin with. The occurrence of lysis, he thinks, indicates infection of a moderate grade. In almost all the cases the odor ceased at once or became so slight as to be hardly noticeable. In one case the steaming had to be repeated on the third day, and then lysis set in. At the time of the appearance of the lochia, on the third or fourth day, he began the use of vaginal injections of sterilized physiological salt solution, and in one case he used injections of potassium permanganate.

The treatment he regards as still in the experimental stage, and he acknowledges that thus far he has employed it with the feeling that there was a cerain amount of risk, especially of inoculating fresh wounds with infectious germs. But he adds that it seems to him a very plausible procedure for reducing the risk to the minimum, particularly in neglected cases, for it not only destroys the germs and covers fresh wounds with a protective coagulum, but induces energetic uterine contraction, whereby the traumatic surfaces are decidedly reduced in size, and involution, which generally means convalescence, is remarkably promoted. He thinks the treatment is especially suitable in cases of so-called habitual abortion, which so commonly depends on a diseased state of the endometrium, that may be overcome by two minutes' steaming at 212° F., followed for six or eight days with applications of tincture of iodine.

Dr. Pincus makes it a *conditio sine qua non* that the steaming shall be employed only when there is no complication affecting the adnexa, although incipient inflammatory phenomena—but without suppuration—with irritation of the peritoneum (quoting from Kahn) may be favorably affected by the steam. In the treatment of abortion he does not resort to active interference unless the indication of hemorrhage, fetor, or fever is present. Whatever remnants of the ovum there may be in the uterus he removes with the finger oftener than with the curette, and then irrigates the uterine cavity with an antiseptic solution, using Playfair's tube, and repeating the irrigation daily for several days if necessary. In addition he applies cold compresses or ice-bags to the abdomen, and always gives ergotin subcutaneously. He maintains that the steam treatment is a specific for septic abortion, and probably also for uncomplicated puerperal endometritis, but he closes with the qualifying remark, "*specifica non sunt, nisi in manu periti.*"—*New York Medical Journal*, March 20, 1897.

CHLOROFORM AND THE HEART.

In an editorial in the *British Medical Journal* of April 24, 1897, is discussed an important paper, which so completely supports the views expressed in the THERAPEUTIC GAZETTE in various issues that we venture to reprint it, although it is based entirely on a Progress article in this same issue from the *British Medical Journal* of April 17:

"In an address delivered before the Society of Anesthetists on February 18, which was published in the *British Medical Journal* of April 17, Mr. Leonard Hill brought forward additional evidence of the incorrectness of the doctrine, promulgated by the Hyderabad Chloroform Commission, that chloroform has no direct action on the heart. This new evidence is the outcome of his researches into the influence of the force of gravity on the circulation of the blood, which were communicated to the Royal Society in November, 1894, and published in detail in the *Journal of Physiology* in the following year. When an animal is turned from the horizontal to the feet-down position, the cannula in the artery being ingeniously placed in the axis of rotation, there is a fall of blood-pressure in the carotid, and a fall of intracranial pressure. The fall of blood-pressure is not great, and in a normal animal under morphine it soon rises to but a little short of the pressure recorded in the horizontal position. The mechanism of this recovery or compensation has been carefully investigated by Mr. Leonard Hill, and he has shown that it depends upon the integrity of the vaso-motor and respiratory systems, together with the efficiency of the heart. In the feet-down position the blood accumulates in the vessels of the abdominal viscera, and it is 'lifted' on to the heart by an increase of tonic constriction of the splanchnic vessels, aided by an increase of abdominal pressure brought about by contraction of the muscles of the abdominal wall. Previous section of the splanchnic nerves, or division of the dorsal spinal cord, by removing the tone of the splanchnic vessels, leads to a much greater fall, and does away with the power of compensation, although the animal endeavors to drive on the blood by powerful contractions of the expiratory abdominal muscles. When these are also divided the blood-pressure falls still lower. If the chest is opened the heart is seen to be bloodless and empty, but can be immediately filled by pressure on the abdomen. Increased activity of the vaso-motor center is the main factor in bringing about the recovery of pressure.

"It is interesting to note that in an 'upright' animal, such as the monkey, the compensating mechanism is very efficient and prompt, and in fact there is frequently overcompensation, so that the carotid blood-pressure is higher in the upright than in the horizontal position. The same is the case in man, and this has been clearly shown by Dr.

George Oliver with his ingenious instrument, the arteriometer. This instrument gives an indication of the pressure in an artery by measurement of its diameter, and shows that the diameter of the radial artery of a healthy man is greater in the sitting than in the recumbent position. In the upright position the heart beats faster, for it has more work to do in sending the same quantity of blood through the brain and through the abdominal viscera back to the heart again. The increased work of the heart is the third factor in bringing about compensation on change of position. As long as the heart is able to do this very small increased amount of work the pressure recovers; but if it is not able to do it, only an incomplete and poorly sustained compensation is brought about.

"Now, Mr. Leonard Hill finds that chloroform is a most powerful agent in doing away with the power of compensation. With moderate anesthetization the fall of blood-pressure on turning the animal into the feet-down position is very considerable, and that the blood largely accumulates in the splanchnic vessels is shown by the considerable recovery of pressure, though short of normal compensation, brought about by compression of the abdomen. This compression drives blood on to the heart, and the heart forces some of it on into the arterial system. Very different is the result when the anesthetic is pushed: a very great fall of pressure is produced, and compression of the abdomen, or even turning the animal feet up, leads to no adequate rise of pressure. The feet-up position does not restore the pressure to as high a level as that which was maintained in the feet-down position before the chloroform was pushed. It is no use squeezing blood on to the heart, for it is incapable of dealing with it. A heart under the influence of chloroform is not able to do the small additional work required to maintain anything like the same pressure when the animal is turned from the horizontal to the vertical position.

"The experiments show the essential difference between a low pressure produced by vaso-motor paralysis and one produced by chloroform, and leave no doubt whatever that the dangerous fall produced by the drug is due to direct action of the heart. So that from an entirely different standpoint the work of MacWilliam, Ringer, and others, and the results obtained by the elaborate cross-circulation method of Gaskell and Shore, are completely confirmed. Mr. Leonard Hill points out that the tracings of the Hyderabad Commission also show that failure of the circulation is really the cause of death; for the respiration stops, not because the center is paralyzed, but because the blood-pressure has fallen to a certain amount, and it recommences when this is by any means raised to that amount again, although the center is thereby supplied with as much chloroform as before. In fact the tracings of the Commission, as Dr. Gaskell and Dr. Shore have pointed out, are, so far as they go, as good as any others; they are infallible records made by the animals themselves, and when read by competent physiologists tell the same tale as all others do.

"Mr. Leonard Hill has not omitted to point out the practical bearing of his experiments on the treatment of that commonest cause of death from chloroform—syncope in an early stage. In one year, out of forty-one deaths from chloroform syncope, thirty-nine occurred in the primary stage before the patient had been touched by the knife. The sudden application of concentrated chloroform vapor causes struggling and holding of the breath, the glottis is closed, and intra-thoracic pressure is raised; the lungs are thereby compressed and largely emptied of blood: this leads to engorgement of the right heart and congestion of the venous system, until at last two or three very deep respirations are taken, and there is a sudden rush to the left heart of a mass of blood surcharged with chloroform. The heart, already dilated, is then paralyzed. Holding strong chloroform vapor to the nostrils of a struggling patient is to court disaster.

"When syncope has occurred the chief thing to do is to relieve the heart of blood and not to drive blood to it, as is so often done by inversion or flagellation. Artificial respiration is to be applied in the horizontal position by forcibly compressing the chest rhythmically, with the object of bringing pressure to bear on the heart. If this is not immediately successful the same maneuver must be carried out in the vertical feet-down position, and under no circumstances must the abdomen be compressed or the patient inverted. If only a little blood can be forced through the heart and the pressure on the right side be sufficiently relieved spontaneous contraction will soon occur, and as the blood-pressure rises respiration will begin again. Mr. Leonard Hill's experiments afford additional proof of the difference in action of ether and chloroform. With ether the fall

of pressure is much more gradual, and when the animal is placed in the feet-down position the drop of pressure is comparatively small; but even when the ether is pushed and a low pressure produced it can be at once raised by compression of the abdomen or by the resumption of the horizontal position. The heart is comparatively little affected, and, as the blood is brought to it, it can pass it on, but the chloroform heart cannot. As to the physiological action of chloroform, and the comparative safety of ether, recent experiments on animals are, we are glad to see, in complete accord with clinical experience."

THE CAUSATION OF CHLOROFORM SYNCOPE.

In the *British Medical Journal* of April 17, 1897, LEONARD HILL of London concludes a valuable paper supporting that of Hare in the GAZETTE for February, 1897. He says from the previous experimental discussions in this paper it is conclusively proved that chloroform may paralyze the heart, the vaso-motor mechanism, and the respiratory center. If it happened that we simply had to deal with failure of the respiration this would be no matter of grave danger to the patient. Artificial respiration will remove the danger. If simple vaso-motor paralysis occur concomitantly with failure of respiration, as is always the case, artificial respiration combined with slight elevation of the abdomen to a level above that of the heart would immediately restore the patient to safety. It is when the clinician has to deal with the paralytic dilatation of the heart that the gravest danger has to be faced. As it is impossible to diagnose whether this condition may exist or not, every case of chloroform syncope should be treated as if it did exist. Recovery can be brought about, and, so far as the writer's own experience goes, practically in almost all cases, by following this simple procedure: At the moment syncope occurs the patient must be placed in the horizontal position, and artificial respiration applied. The chest must be rhythmically compressed by placing the hands on each side of the thorax, so that the heart may share in the compression, and the circulation through that organ may by artificial means be maintained to a certain extent. If this is not quickly successful in restoring the pulse and natural breathing, the patient should be turned into the vertical feet-down position. By this means the dilated right heart will be emptied into the abdominal veins. Whilst this is taking place, artificial respiration must be maintained. The writer states he has frequently seen the paralyzed heart start beating again on thus emptying it of the blood. After a few seconds the patient should be returned to the horizontal position, and the right heart will thus be refilled with a fresh supply of venous blood. By means of the artificial respiration this blood is driven on through the lungs to the left heart, and thence into the coronary arteries. If this maneuver does not prove successful at the first attempt, it must be repeated. Since he has adopted this method he has scarcely failed to recover a single case of chloroform syncope. The success enormously depends on the swiftness with which the condition of syncope is recognized. Nelaton's inversion, or the feet-up position, is only a safe measure in cases of syncope arising from vaso-motor paralysis. Either inversion or compression of the abdomen are fatal mistakes in cases of cardiac failure. A poisoned heart is with greatest ease thrown into paralytic dilatation by compressing the abdomen, as shown by a number of experiments.

By rhythmically and artificially compressing the thorax or the heart he has found it possible to maintain an arterial tension of twenty to thirty millimeters Hg. This causes the coronary arteries to be flushed with fresh blood, and the heart to be excited to spontaneous contraction. After the circulation has thus been renewed, the respiration frequently remains in abeyance because the arterial tension is too low to excite the center to activity. In this condition the best plan is to cease artificial respiration, and carefully observe the pulse. The arterial tension, on account of the asphyxia, will rise, and when it has reached a certain level spontaneous respiration will start once more. If by any chance the pulse should show signs of again flagging artificial respiration must be immediately resumed for another period.

As to the danger of administering chloroform the author entirely agrees with the Hyderabad Commission that the inhaler should only be applied when the respiration is quiet, and should be removed entirely if the patient shows any sign of struggling. If this precaution be always taken deaths from chloroform would become far more rare; nevertheless, it must always be looked upon by the inexperienced as a most dangerous drug, and one the use of which should be avoided whenever ether can be appropriately substituted.

Pure chloroform, he has found, kills in exactly the same way as impure chloroform. The A. C. E. mixture, on the other hand, is safer than pure chloroform simply because the latter drug is diluted, and therefore is not given in a concentrated form. Chloroform is the predominant partner in the mixture, and when A. C. E. is pushed the animal dies with all the symptoms of chloroform syncope.

Towards the close of his paper Hill says chloroform produces a primary failure of the circulating mechanism and a secondary failure of the respiratory center. The respiratory center fails to act not only because it is damaged by the drug, but because of the anemia of the spinal bulb produced by the fall of arterial tension. This is proved by the fact that the action of the respiratory center can be renewed by raising the arterial tension. The depth of anesthesia depends, as does the paralysis of the respiratory center, on the primary fall of the arterial tension.

Chloroform, more than any other known agent, rapidly abolishes the vascular mechanisms which compensate for the hydrostatic effect of gravity.

Chloroform abolishes these mechanisms by paralyzing the splanchnic vaso-motor tone, and by weakening the action of the respiratory pump. When these mechanisms are totally abolished the circulation is impossible if the subject be in the feet-down position.

Chloroform also produces paralytic dilatation of the heart. It acts directly like amyl nitrite on the musculature of the whole vascular system.

There are two forms of chloroform syncope: (*a*) During primary anesthetization the patient struggles, holds his breath, raises the intrathoracic pressure, congests his venous system, lowers his arterial tension, and finally takes deep inspirations and surcharges his lungs with chloroform. In the first stage the left heart becomes impoverished; in the second stage it is suddenly filled with blood. This is drawn from the lungs, and is full of chloroform. The chloroform passes into the coronary arteries, and the heart is thrown into paralytic dilatation. Respiration and the pulse either cease simultaneously or the pulse before respiration. (*b*) During prolonged anesthetization this arises from gradually giving chloroform to too great an extent. The arterial pressure falls lower and lower, and secondarily the respiration ceases because of the anemia of the spinal bulb. The heart is not in this case paralyzed by chloroform, because the drug is taken in gradually by the shallow respirations, and distributed slowly by the feeble circulation.

Artificial respiration and the assumption of the horizontal position, if applied in time, will always resuscitate a patient from the second form of syncope.

Artificial respiration, established with the patient in the horizontal posture, is also the treatment indicated in the first form of syncope; the heart should be rhythmically compressed by squeezing the thorax. If this does not quickly renew the pulse, the patient should be put into the vertical feet-down posture. The dilated right heart is thereby completely and easily emptied of blood. Artificial respiration is maintained during this maneuver, and the patient is brought once more into the horizontal posture. By rhythmic compression of the chest an efficient circulation is maintained through the coronary arteries; by first emptying and then filling the heart a fresh supply of blood is brought into that organ. If this does not prove successful on the first trial it can be repeated.

Inversion—that is, placing the subject in the feet-up position—or compression of the abdomen will increase the paralytic dilatation of the heart. In this kind of syncope both these forms of treatment are worse than useless.

In the condition of shock or emotional fear the compensatory mechanism for the effect of gravity is almost abolished, and chloroform may easily be the last straw to completely paralyze the circulation.

Vagus inhibition of the heart is of no importance as an agent in the production of chloroform syncope.

Ether is in every respect a far safer anesthetic than chloroform. According to Ringer's experiments on the heart, ether is fifty times less dangerous than chloroform.

With the practical conclusion of the Hyderabad Commission that the chloroform inhaler should be removed during the struggling of the patient or when the respiration is of irregular depth the writer is in absolute agreement, but he considers their interpretation of their own experiments and tracings concerning the origin of chloroform syncope to be mistaken.

Not only the work of all physiologists, but also the tracings of the Commission, when rightly interpreted, prove that paralysis of the circulatory mechanism, and not of the respiratory center, is to be dreaded by the anesthetist.

ON SENILE ENDOMETRITIS.

HERMANN in a new English journal called *Treatment* tells us that when consulted by an old woman about a copious purulent vaginal discharge the vagina should be first treated. Swab the vagina out with strong (!) carbolic acid, and prescribe frequent astringent injections, such as zinc chloride, five to ten grains to the pint. Begin with the weaker and increase the strength if necessary. Repeat the application of strong carbolic acid two or three times, if necessary, with weekly intervals. Take care that none goes on the vulva. If discharge comes from the uterus, there may be so little of it as not to trouble the patient when the vaginal discharge has been stopped. If treatment of the vagina does not abolish the discharge the cervix should be dilated with laminaria tents (!), and the interior of the uterus explored. If growths are felt they should be scraped away and examined with the microscope. If there are no outgrowths the endometrium should be scraped with a blunt curette, any bits detached reserved for the microscope, and then the interior of the uterus swabbed with strong carbolic acid. This will almost always remove the symptoms for a time. If after a short interval they return, and become as bad as before, the best treatment is to remove the uterus.

Matthews Duncan advised the injection of mild astringents into the uterine cavity through a hollow sound. His great authority makes the writer think this worth trying in the case of a patient averse to operation. Duncan says it often fails; and the writer expects little from it.

LAPAROTOMY IN TUBERCULOUS PERITONITIS.

VON MARCHTHURN (*Wien. Klin. Woch.*, March 4, 1897) records nineteen further cases of this affection operated on by Chrobak. No patient died directly from the operation, but one succumbed the day after from inanition. Twelve patients recovered entirely from the peritonitis, but two of them died five months and two years respectively after the operation, of pre-existing pulmonary disease. In three cases a second laparotomy was necessary three to seven months after the operation; two of the patients recovered completely; the third died of pulmonary tuberculosis five months later without abdominal recurrence. Two patients had been tapped before the operation; one of these was cured, the other could not be traced. Eleven of the cases were complicated with lung trouble: of these three died, two from the pulmonary affection, the abdominal mischief having healed, the third from exhaustion. All the eight patients with sound lungs recovered. The author is disinclined to follow Spaeth in forbidding operation in patients with lung disease. In six cases there was tuberculosis of the generative organs; in four both sets of appendages were affected, but too tightly bound down by adhesions to be removed. In three of these the tumors disappeared after the operation; the fourth patient left the hospital relieved, but was then lost sight of. Of the other two patients, one, who died the day after operation, had a tuberculous abscess of the left ovary; the other, a tubo-ovarian cyst, which could not be removed, and which eighteen months later had given rise to no further trouble. Three cases had high temperature before operation; these did perfectly well, and in only one of the others did the thermometer register 100° F. after laparotomy. The diagnosis was invariably verified microscopically. The after-history was unfortunately deficient in six cases. Altogether out of thirty-eight cases treated by Chrobak in the years 1896–97 by simple laparotomy, twenty-one (fifty-five per cent.) were completely cured. The most rational explanations of these cures appear to be stimulation of the peritoneum and the removal of fluid from the abdomen; the former is the more generally applicable, as dry tuberculous peritonitis is equally adapted to the treatment. The author concludes by giving Chrobak's opinion that in tuberculous peritonitis medical treatment is useless, and tapping at best but of temporary service; incision, and if necessary evacuation of the abdominal contents, afford by far the best chances of recovery.—*British Medical Journal*, April 17, 1897.

PRURITUS.

DIRNER (*Centralblatt f. Gynak.*, No. 5, 1897) introduced, by reading a paper on the operative treatment of pruritus, an important discussion on that disease at a recent meeting of the Royal Hungarian Medical Association. He admitted that the diabetic variety was curable; so was that form of pruritus due to microbes in vaginal or cervical secretion. The intractable cases were clinically and pathologically primary. They represented subacute inflammation of the vulvar

integument and fibrosis of the Pacinian corpuscles and other delicate structures. Dissecting off the skin involved in this morbid process, "vulvitis pruriginosa," alone effects a cure. He read notes of two cases, one particularly obstinate, where the patient was aged 65. He dissected off all the vulvar integument from the mons veneris to the navicular fossa, taking away the clitoris. The wound was sutured with silver wire, and covered with iodoform collodion. It healed by first intention. After healing there was no tension, though so much skin had been removed. Tauffer found that pruritus from germs, secondary to leucorrhea and endometritis, is very hard to treat. Besides treatment of the existing cause, free application of sublimate lotion is needed. Diabetic pruritus is certainly difficult to cure. Kezmarszky agreed with Dirner as to a primary prurigo due to degenerative changes in the skin, and needing operation. He found, contrary to Tauffer, that the secondary forms, pruritus from diabetes and from germs in discharges, yield readily to symptomatic treatment.—*British Medical Journal*, March 27, 1897.

CATHETERISM OF THE URETER IN THE MALE WITH THE HELP OF THE URETER CYSTOSCOPE—A REPORT OF SEVEN CASES.

In the *Medical Record* for May 1, 1897, WILLY MEYER publishes an article in which he says: There is no longer such a thing as testing the efficiency of this procedure. Let it be generally understood that to-day the ureters of the male can be catheterized and the kidneys drained without a previous cutting operation. But the method has its limitations, as cystoscopy has when carried out with Nitze's instrument. The method will and must be a failure whenever the three cardinal conditions which permit cystoscopy cannot be fulfilled, viz.:

1. If the caliber of the urethra is not sufficiently large to allow the passing of the instrument.

2. If the bladder has not a capacity of at least four or five ounces.

3. If the fluid within the bladder cannot be made and kept transparent.

Now and then these cardinal conditions are fulfilled, and yet the method proves unsuccessful owing to the fact that the mouths of the ureters cannot be found, or that they cannot be approached, or that they are too small to allow the entrance of even the finest of catheters. Sometimes the catheter has well entered the ureter, but it soon becomes plugged by descending blood or pus.

With reference to the work itself, the author can repeat to-day what he said a year ago: He considers the manipulation here in question an easy one, in the male as in the female. He has not changed his views since then. To approach the ureteral mouth and engage the tip of the tiny catheter in the same is not a bit more difficult in the male than it is in the female.

Of course, in order to be successful a perfect familiarity with cystoscopic work is required. He who thinks that for catheterism of the ureters in the male it is merely necessary to buy Casper's or Nitze's instrument and then proceed, is very much mistaken, and will no doubt be disappointed in his attempts, surely in his first ones. He had practised cystoscopy with Nitze's instrument in the male and female for fully eight years before he catheterized the ureters in the male for the first time. The reason for this was not that such a long preparation is needed, but simply because a useful instrument was not to be had sooner. Such was not for sale before 1895. But during these eight years he had learned in many hundreds of cases how to find the ureteral openings, even under adverse and difficult conditions. He had learned how to approach them even in such cases. For half hours at a time and longer did he in a great number of instances uninterruptedly watch the ureteral jets for the sake of determining the transparency or turbidity of the descending urine. He had carefully timed the outflow with a view to finding the working coefficient of the respective kidney. Often did he do this for so long a time that he was forced to stop because of the running of his eyes due to the severe strain. If the cystoscopist knows how, the author might say, to "handle" the ureteral openings he will surely enjoy this kind of work, as the author has done from the very beginning.

But he who does this sort of work in the male should always have made up his mind to proceed with patience and perseverance; he must not be in a hurry. His patients come on special appointment. It has taken him at times fully two hours before he got through, and then, in one instance, he had to be satisfied with the collection of 4.5 cubic centimeters from the one kidney; in another case the catheter did not give exit to any fluid whatever on the one side. But

the reason for this annoyance was not the difficulty of the procedure, but some mechanical obstruction of the catheter's eye or lumen. Plugs of descending pus, the smallest amount of coagulated blood, with some pushed-off epithelial cells of the ureter, may easily obstruct the eye of the tiny catheter. If repeated aspiration with a powerful syringe attached to the outer funnel-shaped end of the ureter catheter does not soon make the urine flow through the catheter, one ought to pull back the catheter's tip into the bladder, then wash out the canal with sterilized boric-acid solution, the eye of the ureter catheter being within the vesical fluid, and then reintroduce the instrument. As mentioned above, he did this maneuver in the case of a lady three times. At the fourth reintroduction urine at last began and continued to flow through the catheter.

He further wishes to mention the necessity of good assistance when catheterizing the ureters. He believes it is impossible to do good ureteral work in the male without a trained hand at one's side. He has so far always had and needed the help of his office nurse. She thoroughly knows what he wants, how to fix the cystoscope and the catheter when he pulled out the mandrel, how to steady the instrument when the catheter is *in situ*, etc. All these points to be observed when carrying out the work may at first seem cumbersome and superfluous, yet he deems them absolutely essential for successful ureteral work in the male.

In summing up these remarks he would say that repeated disappointment in the early time of ureteral work in the male should not discourage the cystoscopist. On the contrary, it should stimulate him to further trials. The reason for his failure should be sought rather in lack of experience in intravesical cystoscopic work, and also perhaps in lack of proper assistance, than in the imaginary defect of the instruments used for this purpose. Both of the ureter cystoscopes now in our hands are useful and do not need special improvement.

In order to be successful in using Casper's instrument, one will do well, he believes, to follow the rules he has laid down in his former article, repeatedly referred to—rules which he has found practical by personal experience. They are, briefly repeated and revised, and extended after his additional experience, as follows:

1. Wash and cocainize the bladder according to well known rules.

2. Fill the bladder with from five to seven ounces of clear fluid.

3. Introduce the instrument. For this purpose the ureter catheter should be pushed down to the internal opening of the canal of the cystoscope; the lid of the latter should be pulled out about one-third inch.

4. As soon as the beak has entered the bladder the catheter should be gently pushed forward into the vesical cavity about one-half to three-quarters of an inch, and then the lid should at once be pushed back into place, *i.e.*, it should be fully closed.

5. After the interior of the bladder has been inspected and the ureteral openings have come into view, approach one of them.

6. Let the ureteral opening appear at the very end of the cystoscopic picture, farthest away from the middle of the bladder; but keep it under your direct inspection, with the prism as near to it as possible.

7. Push the catheter gently forward; if the beak's direction is a proper one, *i.e.*, if it is parallel with that of the lower end of the ureter, he is sure the ureteral catheter will almost invariably easily enter the mouth, when conducted by a trained hand.

8. Allow the catheter to proceed not more than one or two inches into the ureter, and withdraw the wire mandrel. Then, as a rule, urine will begin to flow drop by drop at intervals or continuously.

By faithfully adhering to these rules in the author's work, he has invariably been successful. Of course, the number of patients thus treated is not yet very great. But, so far, he can repeat conscientiously that whenever, in male or female, he has been able to see and approach the ureteral opening, he he has also succeeded in introducing the catheter into the same. He has specially added the words "so far" because he has no doubt that he may probably encounter cases in the future in which his attempts will not be crowned with success, although the ureteral openings can be well seen and approached. But up to date there has been only one among all his cases, male and female combined—a patient of Dr. F. Cushier and Dr. Robert F. Weir, of this city—in which he has failed in his repeated attempts, although he saw the opening very distinctly before him. However, in this patient he afterward also failed with Kelly's method in repeated sittings. There was no catheter or probe small enough, metal or flexible, to enter the mouth. The reason for this was partially, as had been primarily well ascertained with the cysto-

scope, that the ureter emerged, not as is usually the case, at the innermost end of the ureteral intravesical fold—*i.e.*, nearest the trigonum—but about one centimeter away from it upwardly. The consequence was that the ureter catheter, in order to pass on, would have had to turn in a sharp angle right after its entrance into the ureteral mouth. This seemed not feasible. Besides, the mouth of the ureter was constricted, evidently congenitally. Such strictures we have to put on a basis with the congenital narrowness of the external meatus, so often found in the male. By chance he nevertheless succeeded in determining the question at issue, viz.: Is the opposite kidney healthy? He adds this here because the case really was a perplexing one. There had been an intermittent renal pyuria for the last two years. The right kidney was large, easily palpable, slightly painful to the touch. At the third sitting it struck him at once that when washing out the bladder the water returned clear from the beginning. He concluded that on this day the ureter of the diseased side was most probably temporarily obstructed. Cocainization of the bladder was somewhat prolonged on account of making preparations for the following work. It may have taken in all about six or seven minutes. During this time the patient, who had taken a great deal of fluid before going to the author's office, discharged five ounces (!) of urine into the bladder. Instead of drawing off 50 cubic centimeters of the cocaine solution and perhaps 10–20 cubic centimeters of meanwhile admixed urine, he measured 200 cubic centimeters (50 cubic centimeters of a two-per-cent. solution of cocaine had been injected by him). On viewing the bladder after Kelly's method he saw that the ureter of the presumably diseased side, which emptied within the center of an irregular ulceration, did not discharge a drop of fluid. Examination of the 200 cubic centimeters of mixed cocaine solution and urine proved the latter to be perfectly normal. In other words, there was a well-working, healthy opposite kidney. Dr. Weir successfully removed the diseased kidney. The operation, as well as the specimen thus obtained, proved to be of unusual interest.

Whether we should advise patients to take a large amount of fluid before examination is still a mooted question. In the male he believes it is a wise plan. As explained in his former article, in the male we must drain one kidney after the other—if possible, of course, always in the same sitting. That is to say, we cannot generally leave the catheter first introduced into one ureter in place; liberate it; catheterize the opposite side, leaving the catheter there also *in situ;* remove the cystoscope. There will be few urethræ found in the male of sufficiently wide caliber to allow properly moving the cystoscope with the catheter at its side within the urethra. It may often be possible under general narcosis. The latter, however, it seems to the author, should for various reasons be avoided as much as possible in this procedure. We drain the kidneys separately for renal disease, and ether as well as chloroform is detrimental to the renal tissue. So far, he never used or needed general anesthesia for his ureteral work. This, as mentioned above, has been office work throughout.

In the male we are, therefore, limited in time. The sooner the patient gets through, the better. The more fluid he has taken before the examination, the more rapidly his kidneys will work. Of course, due weight must be given this point in drawing conclusions from the urinary analysis. However, as both kidneys have been subjected to greater work at the same time, mistakes can be avoided by a competent analyst.

In the female the case is different. Both kidneys may be drained for hours, provided we do the work at the patient's home or at the hospital. The urine from each can be separately collected in proper bottles put into the bed. We certainly can state the fact: Urinary analysis will be more satisfactory without diluting the renal secretion too much by previously ingested fluids.

With reference to finding out the amount of work done by each kidney within a given time, he formerly counted the drops that were discharged through the ureter in a certain number of seconds, and also counted the intervals between the different discharges. He has discarded this method since he has distinctly seen jets of urine at the ureteral opening enter the bladder with the ureter catheter *in situ*. The urine evidently often drains alongside the catheter besides passing through its lumen. The catheters which accompany Nitze's ureter cystoscope are of more use in this respect than those of Casper's instrument. The former have an end hole behind a scoop-shaped lengthening of the material of which the catheter is made, the whole thus forming a sort of bougie. The latter carry the eye at the side. Neverthe-

less he believes that timing the number of drops discharged through the ureteral catheter is an unreliable observation.

His whole work with a cystoscope according to Nitze's principles has, so far, been done with Casper's instrument—this for the simple reason that the first specimen of Nitze's reached him in a damaged condition. Before it was exchanged by the factory, more than half a year elapsed. He will certainly try it the first opportunity that offers.

Whether in the female one should make use of a cystoscope constructed on the Nitze plan, or of Kelly's instruments, is really a matter of taste. The manipulation with the imported ureter cystoscope certainly is a very gentle one; it is also very comfortable for the patient. She rests her back in the position used by us for bimanual vagino-abdominal palpation.

A trained cystoscopist should, in the author's opinion, be master of all methods "that have proved useful and can be made use of for this purpose." In many instances he may, even in the female, succeed with the one method or instrument when the other failed for certain reasons.

In the male we have no choice. As explained at length above, Kelly's method for catheterism of the ureters is here a technical impossibility. We need instruments which carry the electric light into the bladder, and enable us at the same time to inspect and catheterize the ureteral openings by looking through a telescope and guiding the catheters through a separate channel.

With regard to the indication for catheterism of the ureters, it is in his opinion our duty to try to separately collect and analyze the secretion of each kidney "in the male as well as in the female" in all so-called obscure urinary diseases, provided the analysis of the bladder urine points to a renal lesion. It becomes our solemn duty to establish the presence, the health or disease, if possible also the working power, of the opposite kidney if nephrectomy has to be done.

If physicians will appreciate the importance of this now feasible examination, and make it a point to have cystoscopy and catheterism of the ureters in the male as well as in the female added to the other means at their disposal for arriving at a definite diagnosis, then the so called obscure urinary diseases will at last become a thing of the past in the male also, and our diagnosis in the majority of such cases will from mere guesswork be put on a strictly scientific basis.

RESECTION AND EXTIRPATION OF THE LARYNX FOR MALIGNANT TUMORS.

Many lives could be saved if the diagnosis of malignant tumors could be made earlier. A writer in the *Beitrage z. Klin. Chir.* urges physicians and students to master more thoroughly and universally the technique of laryngoscopy, so that malignant neoplasms can be discovered more frequently and removed in their incipient stages. Mikulicz has found that a normal function can be retained if two-thirds of the larynx can be saved. Important in this respect is the secondary suture to decrease the size of the wound, and the prevention of the formation of epidermis from the edges in. In thirteen cases operated, four have remained in good health since, one and one-half to eight and one-half years. One succumbed shortly after the operation; another died later of phthisis. In five cases the tumor grew again in three to ten months, with a fatal result in four. In six cases superior tracheotomy was performed, and inferior in the rest. Hemostastis was secured by ligatures and lateral compression; only once was the thermo-cautery necessary. He considers frequent changing of the bandages very important. Food was taken by the sound through the wound or lower nasal passages. He has never applied an artificial larynx.—*Centralblatt für Chir.*, March 13, 1897.

FAVORABLE EFFECT OF LAPAROTOMY ON TUBERCULOUS PERITONITIS.

GATTI has produced experimentally tuberculous peritonitis and then cured it with a laparotomy; gradually the tuberculous cells and the bacilli disappear, the products of degeneration are absorbed, and a process of reorganization ensues, in the course of which the peritoneum becomes normal not only to the eye, but to histologic and bacteriologic tests also. The process requires six to eight months, and the laparotomy, to succeed, must be performed at the proper moment, neither too soon nor too late, the tubercle fully developed and before the caseous degeneration has begun. As it is difficult in the clinic to determine the exact moment when the operation is needed, Gatti recommends a second laparotomy if the first proved ineffectual, and it was noticed that caseous degeneration had not begun. Burci ascribes the effect of the laparotomy to the combination of trauma, change of temperature, admission of light and air, etc.—*Gaz. d. Osp. e. d. Clin.*, No. 13, 1897.

THE TREATMENT OF HYPERTROPHIC RHINITIS BY RESORCIN.

GONZALES CAMPO (*Annales des Maladies de L'Oreille du Larynx*, No. 5, 1897) holds that hypertrophic rhinitis depends either upon a myxedematous degeneration of the mucous membrane or hyperplasia of the submucous connective tissue, consecutive to a chronic coryza. It often accompanies and usually precedes pulmonary phthisis. Bougies, massage, electrolysis, chemical cauterization and galvano-cautery have all failed to cure the trouble.

The author has succeeded with baths of one-per-cent. solution of resorcin. He has treated more than 125 cases. All were cured in about two months, the treatments being repeated every two or three days.

The first effect is one of irritation, followed in an hour or two by retraction of the hypertrophic tissue. Treatment is not applicable to neuropaths.

Castaneda in considering the anti-diphtheritic treatment in ozena states that one statistical table comprises 32, another 24, and that in this entire list but two undoubted cures have been obtained. He notes amelioration but not a cure in one of Compaired's cases. When cases of ozena are due to tuberculosis or hereditary syphilis, diagnosis may be determined by the use of tuberculin or mercury.

THE NEW TREATMENT OF OZENA.

COMPAIRED (*Annales des Maladies de L'Oreille du Larynx, etc.*, No. 5, 1897) reports seven cases of ozena treated by hypodermic injections of antidiphtheritic serum. In two instances roseola developed, in one an abscess at the seat of injection. In some instances there was fever, loss of appetite, nausea and general debility. In one instance treatment had to be suspended on account of the frequency and intensity of the nausea. This case was scrofulous, semirachitic and profoundly anemic before treatment. The number of injections employed varied from four to twenty-seven. The quantity at each injection was from four to twenty centimeters. The first symptom noted was disappearance of odor. This was followed by edema of the mucous membrane, augmentation and fluidification of secretion.

During the treatment the author used only nasal irrigations of warm sterile salt water, followed by a nasal spray. The conclusions he announces are as follows: This treatment has given more pronounced and satisfactory results than any other yet proposed for ozena. The results are characterized by the disappearance of the odor after the second or third injection of five or six cubic centimeters, and by diminution of the clots and increase of the nasal fluid. The mucous membrane changes in color, becomes redder, more humid, sometimes slightly hyperemic. The crusts are less heavy, dry and extended, and become softer as the treatment progresses. Doses of ten cubic centimeters are not unattended with risk. The dosage should be increased very gradually.

THE CURABILITY OF DEAF-MUTISM.

VERDOS (*Annales des Maladies de L'Oreille du Larynx*, No. 5, 1897) would ascribe deaf-mutism to the otopathy acquired in infancy consecutive to acute rhinitis. From neglect there follows atrophy of the acoustic nerves. Verdos believes that these cases would be curable if the nerves could be stimulated to proper development by vibrations carried through the cranial vault. He states he has cured a dozen deaf-mutes, but sometimes it has required several years. The naso-pharynx received particular attention, the drum was mobilized by means of Politzer's inflator and by the apparatus of Delstanche, and the patients received oral instructions. He would earnestly call the attention of doctors to the cases of acute rhinitis in children, which should be energetically treated.

THE REMOVAL OF HIGH-LYING CANCER OF THE RECTUM BY KRASKE'S METHOD.

SWINFORD EDWARDS (*British Medical Journal*, May 15, 1897) writing upon this subject states that according to the height to which the growth extends so must we plan our operation. For anal carcinoma the old perineal operation suffices. Where the disease extends to the level of the sacro-coccygeal articulation behind, probably a coccygeal excision will suffice, or if more room is required the sacro-sciatic ligaments may be divided. For cases extending up still further, even as far as the pelvic brim, the removal of the lower portion of the sacrum, or Kraske's operation, must be undertaken.

Sacro-coccygeal excision not only lets plenty of daylight into the bottom of the wound, and greatly facilitates accurate suture of the perineum, but enables us, in fit cases, to restore the continuity of the gut after removal of the diseased portion.

That which really militates against the success of any rectal excision is the fact of lymphatic infection, or of the extension of the disease beyond the rectal walls, when the growth, instead of being movable with the rectum on its bed of adipose and areolar tissue, is bound down and fixed to the neighboring parts. Where these factors are present attempts at extirpation can only end in disaster. Another bar to operative interference is, according to Mr. Cheyne, a rapidly-growing carcinoma.

As to the advisability of a preliminary colotomy, it has much to recommend it as a preliminary to perineal excision. When we adopt the sacral route, however, it is quite unnecessary on the following grounds:

1. Any wound of the serous membrane can be seen and accurately closed, thus avoiding fouling of the peritoneum.

2. The loss of two or three weeks a previous colotomy entails may make all the difference between success and failure after excision.

3. It is not so likely to be followed by stricture as after the perineal operation, and therefore no subsequent colotomy is necessary; were it otherwise the writer would be inclined to regard it as an argument in favor of a previous one.

4. A colotomy may seriously interfere with or altogether prevent a rectorrhaphy by making it difficult or impossible to bring down the upper rectum by reason of the adhesions between the sigmoid colon and abdominal wall.

If not absolutely necessary, it is hard lines to saddle a patient with an abdominal artificial anus and to subject him to the risk—small as it is—of this extra operation. It might be said: "What does it matter where the artificial anus is placed? If a colotomy is performed the patient will be saved an anus in the sacral region!"

This, however, does not necessarily follow, as the end and aim of Kraske's operation is to restore the continuity of the bowel with use of the normal anus. Even where this cannot be carried out, patients seem to prefer the artificial anus to be placed somewhere between the folds of the buttocks, in the neighborhood of the original outlet. It must also be borne in mind that a previous colotomy is not an unfailing safeguard against peritonitis following injury to the serous membrane during the course of an excision; one of the patients treated by the writer succumbed on the ninth day after an excision, although he had previously been subjected to colotomy.

It is important, in preparing a patient for the operation, to get the general health into as good a state as possible, and to clean out the bowels for some days before with aperients and enemata. As a first step in the operation he has made it a practise to wash out the rectum thoroughly with some antiseptic — sublimate solution, 1 in 2000, for choice.

With regard to posture, Littlewood's modification of Godlee's position has much to recommend it. He places the patient in the position used for dissecting the buttocks, raising pelvis on a block, and having both knees flexed and resting or kneeling on a chair.

After a longitudinal central incision about six inches in length through the soft parts down to the bone, it may be found that plenty of room is obtained by simply removing the coccyx. In one case, although the upper limit of the growth was on a level with the middle of the sacrum, removal of the coccyx gave ample room. If more is necessary, division of the sacro-sciatic ligaments on the left side may suffice. Whether more of the bone can safely be removed is a question, though Volkmann and Rose appear to have divided the sacrum transversely as high as the second foramen. For the purpose of effecting the division, some use a saw, but a chisel is much easier to work with, and more expeditious. To avoid wounding the soft parts under the bone, it is well to separate them with a periosteal elevator from the anterior surface of both sacrum and coccyx.

If any considerable bleeding takes place during the operation it is here that we may expect it, owing to wound of the middle sacral vessels. After their division they may retract and be difficult to seize, being concealed by the sacrum or what remains of it. Here it is that a good assistant is very necessary.

The bowel has now to be separated, in doing which it is as well after division of the levatores ani to keep to that plane of recto-vesical fascia which surrounds the gut, and not to attempt to dissect the bowel out of its bed of perirectal fat; by thus doing much bleeding is avoided and time saved. Separation of the posterior and lateral walls having been effected chiefly with the aid of the finger, it remains to deal with the anterior. The author prefers to clamp the gut well above the growth and to cut it through, in doing which the peritoneum is generally

opened, when a sponge or gauze plug may be inserted temporarily and the dissection proceeded with from above downwards.

The writer gives a table of cases which show that he has several times in coccygeal excision avoided wounding the peritoneum; but he is not at all sure that one does not lose more than one gains by so doing—that is, if a junction of bowel is contemplated—for unless the serous cavity is freely opened it is often impossible to bring down the proximal end.

The question of deliberately and freely incising the peritoneum and subperitoneal tissue with a view to rectorrhaphy seems well worthy of consideration. Where one can avoid opening the peritoneum one should do so, even if it entails abandoning the rectorrhaphy; but where the peritoneum is wounded and the gut cannot be brought down without a freer division, such a course is justifiable in view of the end to be obtained.

The affected portion of the rectum having been removed, and any wound of the peritoneum carefully closed with a continuous suture, one is now able to determine the feasibility of intestinal anastomosis. If there is a sufficient length of the lower end saved, and too much tension is not caused by approximating the parts, it certainly should be attempted, for if not successful in the entire circumference a great deal is gained by union of the anterior part. As to the best means of effecting this, there is not much to choose between a bone bobbin and a direct suture. He has tried Murphy's button, but does not think that it is suitable to this part of the intestinal canal, on account of the absence of a peritoneal coat to the lower portion, so that there can be no union of serous surfaces. Maunsell's method is of course out of the question. In cases where we can be tolerably certain of performing a satisfactory circular rectorrhaphy it would be well to leave the coccyx and segment of sacrum attached by one or other border; in other words, to form a bone flap, as in the method of Roux, so that after the intestinal suture the parts may be replaced before finally suturing the skin. If the position of the growth necessitates the removal of the anus, it is of course useless to attempt to close the wound, excepting in its upper part over the exposed sacrum. A few sutures should fix the end of the gut to the skin margin below the sacrum, or if thought better a ligature may be passed round the bowel to occlude it, fastened to the wound, and allowed to slough off, by which means the wound is kept free from feces for some days. If rectorrhaphy has been done the wound should be well flushed with sublimate, and a little iodoform dusted in, especially about the intestinal junction, before closing it. The insertion of one or two drainage tubes is of advantage. When the wound is left open a firm packing of either bicyanide or iodoform gauze forms the best dressing. This operation is naturally often followed by considerable shock, for which stimulants, a warm bed, assiduous nursing, and possibly strychnine, will be required. As yet the author has not had to transfuse, but it might be necessary.

With regard to after-treatment, there is nothing special to be said; that is, speaking of simple excision cases, he does not trouble about the bowels; if they remain quiet for a week so much the better, but as a rule a motion is passed before this, perhaps in spite of opium given to relieve pain. Most patients begin to get up and about after a month, and at the end of two are practically well. Some form of truss may have to be worn where there is either prolapse or incontinence, the latter being not infrequent where rectorrhaphy has not been successfully carried out.

A summary of fourteen cases which the writer details gives two deaths—that is, a mortality of a little over fourteen per cent.; two recurrences—one in two years and one in four months; ten living and well, of whom one is in good health after five years, two in good health after nearly three years, one after one year and nine months, three after one year, one after six months, and one after three months; one case has not been seen since leaving the hospital.

E. H. Taylor, of Dublin, in an excellent article in the *Annals of Surgery* for April of this year, states that the mortality of this operation is from twenty to twenty-five per cent., while Cheyne, in his lectures already referred to, estimates it at from eighteen to twenty per cent. He says: "The mortality varies considerably between the perineal and sacral operations, being naturally higher for the latter." In this Edwards agrees, for out of many cases of perineal excision he has not had a death. He further says that König's total mortality is 38 per cent., Billroth's 34, Kocher's 28, Albert's 18; Iversen's estimate of Kraske's operation 25 per cent., and Czerny's 19.4 per cent. He has not been able to find any statistics regarding the work of British surgeons. Ball, in the second edition of his

work, states that he has had four cases, which were all cured; and Littlewood's three cases have already been mentioned. Allingham, in his last edition, says he has performed the operation several times, but with what result is not stated.

THE PROGNOSIS AND TREATMENT OF ACUTE GENERAL PERITONITIS.

ABBE, in an interesting contribution on this subject appearing in the *Medical News* for May 29, 1897, concludes that a study of the initial signs in cases which have come to operation and been proved has shown him that uniformity of symptoms is entirely wanting. A persistent diffused spreading to the opposite side of the abdomen is very grave. A board-like stiffness of both sides of the abdomen is suggestive. Tenderness at a point in the rectum as high as the finger can reach in the median line is a sure index of either an inflamed appendix hanging over the pelvic brim, or an acute peritonitis. A pulse that is very rapid and quick, or "snappy," is almost a sure index of septic toxemia, and if it persists more than twelve hours, calls for interference.

Vomiting will usually occur once with most mild attacks, but if persistent indicates mischief. The tongue may be clean and moist and the eye bright in one-third of the cases of grave peritonitis, even after two or three days.

The facies of abdominal inflammation is more often a late symptom. Thoracic respiration is very often seen when spreading peritonitis prevails.

The temperature is frequently but little elevated during the first day or two, while the pulse may be showing great agitation.

These danger signals may serve to aid diagnosis before profound toxemia sets in—when the surgeon can do nothing.

Regarding treatment, substantial progress has been made in determining the lines of action.

There is but one opinion regarding the cleansing of the abdominal cavity when only the lower segment has as yet been invaded. The moment the surgeon sees septic fluid, he sponges it away before it can be scattered. He mops the presenting bowels with sponges in clamps, dripping wet with hot salt solution (one and a half drachms to a quart), and dries them again before drawing other coils into the field of inspection. As soon as parts are found not much inflamed, he pushes a sterilized gauze tampon, properly folded, among the bowels far away from the field of work. This has a tape sewed to it, to which a clamp is fixed and left outside the wound. One or two such tampons may be thrust upward and across the abdomen before the pelvis is cleansed, to which much attention is always to be given. This being thoroughly mopped out, a light packing of mild iodoform gauze is to be placed in the pelvis, and a short way among intestinal coils elsewhere, especially if the gauze tampon now removed prove to have come out wet, absorbing the thin effusion from a distance. The abdominal wound should never be closed in any septic case. It wastes time, confines infection, and prevents drainage.

In the grave cases a long median incision or two lateral ones will always be needed. The lumbar drainage incision will only be necessary when the median cut is used.

The question of drainage has been thoroughly settled in favor of ample gauze packing, as against rubber or glass tubes.

The lymph barrier quickly thrown out by the peritoneum wherever the gauze is in contact at once forms a boundary line, beyond which one process is going on, namely, absorption, destruction, and elimination of the marginal infection, already entrapped, while at the site of packing the current is reversed, and everything is sucked into the gauze and removed.

When infection has been widespread there is but one alternative — irrigation. By flushing the intestinal spaces systematically with hot salt water, as hot as the operator's hand can bear (which will be over 105°, usually), these effects are produced. The water cleanses and stimulates the patient amazingly. One sees the pulse respond at once and remain steady long after the operation, and the absorbing power of the washed endothelium is diminished. This has been shown by experiments of Kinscherf on animals, where doses of strychnine or bichloride of mercury left after irrigation were not absorbed, while the same put into the peritoneum of dogs not irrigated were fatal. Thus the toxin absorption is temporarily arrested, while the patient fights for time to discharge the burden already taken up.

In the large abdominal incisions in bad cases, it is wise to leave the wound widely open. The gauze will hold back the intestines, and abdominal straps and binder will support the abdominal walls.

If the intestines are distended with gas and fluid feces it is well to let them come out of the abdomen, receive them in hot towels in charge of an assistant, and prick one or two prominent places with a knife to evacuate gas and noxious excreta, which is washed away with a constant hot stream. Through one opening there should then be injected a syringeful of saturated solution of Epsom salts, and the puncture closed. The author has done this on three occasions during the past three years, but only in the very worst cases.

McCosh, however, advises in all bad cases to pass such a dose of salts through an aspirating needle into the bowel, and close the aperture with one suture—which Abbe heartily endorses as a routine procedure. It cannot be vomited, it excites downward peristalsis, and as it aids to carry off impurities, it proves of the greatest value.

In regurgitation, lavage of the stomach should be done before and after operation, and repeated as soon as regurgitation is renewed.

The rectal tube to relieve distention by gas is of inestimable value, and its use not infrequently marks the turning point in the disease by promoting downward peristalsis.

Some of the most brilliant recoveries the writer has had have been where the attending doctor has been ineffectually plying the patient with calomel or physic, which acted only after operation, or where a good dose of calomel taken after operation has rid the body of all noxious excretions on the second or third day.

The value of an ice coil, or light broad ice bags, after a general peritonitis, cannot be overlooked. He has great faith in cold thus used to retard the inflammatory action and bacterial growth, either before or after operation. Moreover, it is almost uniformly grateful to the patient.

Strychnine—one-fortieth grain every two hours—is sometimes necessary, and in cases of severe pain when the patient is well out of ether, morphine hypodermically is rather helpful than otherwise.

Close study of bad cases of general peritonitis shows it to be one of the most absolutely fatal maladies with which we have to deal. It has also been demonstrated that logically and statistically the earlier the operation on the lines delineated, the better the prognosis. It has been further shown that even in the bad form, if operation be done and a masterly irrigation carried out, there still remains a chance for life if the period elapsing be not more than two and one-half days. In cases where albumen and casts show in the urine it is proof enough that the system is already overwhelmed, and the kidneys and other glands are choked, and the operation hopeless.

The burden of responsibility for fatal issues in so many cases lies not with the surgeon so much as with those who withhold from him the opportunity to render the prompt aid which has been shown to be the only chance. The ideal success may be accomplished in the future not more by new methods than by new opportunities. The ideal operation may be the old method under ideal circumstances as to time.

SUTURE OF THE LATERAL SINUS.

The suture of large veins when wounded is a surgical procedure which very recently has come into practise, and like the ligature and clamp to control hemorrhage, was suggested by the exigencies of operations, attempts being made by surgeons to preserve the patency of large veins in order to obviate the disadvantages—perhaps death—which would follow their closure. Successful experiments upon animals have been reported from time to time during the last eight years, and many surgeons have obtained good results by suturing the axillary, femoral, internal jugulars, and other large venous trunks. One of the most interesting of these successes was the suture of the inferior vena cava by SCHEDE, after its injury in an operation upon the kidney. At autopsy, some time later, it was seen that the stitches had held perfectly, and that the lumen of the vessel was well preserved. But so far as known, SCHWARTZ records (*Gaz. Heb. de Med. et de Chir.*, Oct. 22, 1896) the first successful attempt at suture of the lateral sinus. His patient was a man, aged twenty-six, who presented himself with necrosis and a sinus behind the left ear, following a kick from a horse, received three months before. At the operation (November 24, 1895) a piece of bone the size of a silver dollar was found depressed. It was adherent in part to the dura mater, and despite every care the lateral sinus was opened during its removal, a rent nearly half an inch in length being made. Hemorrhage was profuse, but when two fine silk stitches placed in the wounded vein were drawn tight, the bleeding was controlled. The wound was lightly tamponed with iodoform gauze, and the patient

made a good recovery. The central portion of the depressed area of bone was necrotic, and it was at this point that the adhesion to the sinus existed.—*Medical News*, May 29, 1897.

A CASE OF RIGHT OVARIAN HERNIA, WITH TWISTED PEDICLE: OPERATION; RECOVERY.

The persistence of the canal of Nuck, the great mobility of the ovary, and its comparatively high position in young children, sufficiently account for the fact that the presence of an ovary in a hernia is decidedly more frequent during the first twelve months than in the whole of the rest of life. The following case, however, is chiefly noteworthy from the partial strangulation from torsion which the herniated ovary had undergone. The condition is very rare and undoubtedly difficult to diagnose.

This case is detailed by Mr. John H. Morgan in *The Lancet* for May 15, 1897: An infant eight months old was admitted to the hospital on March 9, 1897, with a lump in the right groin. There was no history of hereditable disease, but it was of interest to note that a brother had died from strangulated hernia. The infant had always been delicate, and ever since she was four days old a small swelling had been observed in the right groin. Four days before admission this swelling underwent great increase in size, the skin over it became red, and the parts appeared to be very painful, the child screaming constantly and drawing up the right leg. She was convulsed on two occasions, but had not vomited, and the bowels were quite regular. A medical man was consulted, who advised removal to the hospital. On admission the child appeared to be very happy and peculiarly free from symptoms. The temperature was normal. On the right side of the upper part of the *mons veneris*, extending over the right external abdominal ring, there was a rounded, semi-elastic, non-fluctuating swelling, which was not altered in size when the child cried. On attempting to elicit fluctuation pain was produced, and very faint pitting of the skin on pressure could be made out. The child was very fat, but on further manipulation an indistinct, rounded, irreducible body about the size of a cherry could be felt, which could be freely moved about, having as it seemed no connection with the interior of the abdomen. The bowels had acted naturally and there was no sickness. She remained in the same condition until the 12th, when Mr. Morgan decided to operate, and having made an oblique incision over the swelling, he exposed a thin-walled sac in which some dark fluid was seen to be contained. A small incision through this membrane allowed the escape of about one drachm of bloodstained fluid, leaving exposed a smooth, rounded, plum-colored body about the size and shape of a small damson. Attached to the upper end of this, which on closer inspection proved to be the ovary, was a slender pedicle twisted upon itself to the extent of two and a half turns. This stalk was found to consist of the right Fallopian tube and the broad ligament, and upon pulling them further outwards the fundus of the uterus entered the wound. The portion of the twisted pedicle, almost to its attachment to the uterus, was in a congested condition similar to that of the ovary. A fine silk ligature was passed round the pedicle beyond the congested part and tied, and the ovary and pedicle were cut off, and the uterus was dropped back into the abdomen. A suture was passed through the external abdominal ring and tied, and the surface wound was closed with a continuous horsehair suture. The child recovered without a bad symptom and was discharged with the wound perfectly healed on March 24.

EXTIRPATION OF THE LACRIMAL SAC IN CASE OF DACROCYSTITIS.

Rollet (*Lyon Medical*, No. 18, 1897) holds that the immediate results of excision of the lacrimal sac for dacrocystitis are excellent when the operation is complete. After union is obtained by first intention the cure is complete in about six days; the wound heals by granulation in about two weeks. The cicatrix is insignificant. As to the remote results, there are two rare complications, namely, persistent inflammation, necessitating a new intervention and due usually to incomplete excision or epiphora, possibly requiring ablation of the lacrimal glands. These complications occur in about ten per cent. of cases. Though at first sight epiphora would be expected as a rule, lacrimation gradually ceases, since the hypersecretion of the tears, incident to the inflammation of the sac, ceases.

The author gives a minute description of technique, and states that the operation is indicated when dilatation and the other means of treatment, persisted in for a reasonable length of time, have failed.

VAGINAL DOUCHING.

GILES (*The Lancet*, May 15, 1897) states that vaginal douching has become such a universal practise, both in the hands of the public and under the supervision of medical men and nurses, that it may be well to review briefly some of the circumstances in which it is required, and the most suitable solutions under varying conditions. At the outset it is necessary to raise a protest against unnecessary and too frequent douching. The researches of Winter, Döderlein and others have shown that the vagina is normally inhabited by a benign bacillus, to which, through the formation of lactic acid, the acidity of the vaginal secretion is due, and the special rôle of which appears to be to antagonize and disarm of virulence any pathogenic organisms that may enter the canal.

Frequent douching of the normal vagina, especially with soapy and other alkaline solutions, tends to hinder or arrest this beneficent action and to destroy the guardian bacillus. Hence, under the circumstances, morbid conditions are provoked rather than prevented. The same argument applies to the practice of giving a vaginal douche before or during labor, for when this is normal the uterine and vaginal secretions, followed by the rush of liquor amnii, tend to sweep the passages in the most effective way—namely, from within outward. Secondly, it is necessary to protest against a long-continued use of very hot douches, whether in health or otherwise. Frequently, in inflammatory and other conditions of the pelvic organs, the medical attendant orders douches "as hot as they can be borne." These have their place, and an important one, for their effect in relieving pain and pelvic congestion is often most marked; but this is provided they be used only as a temporary measure. Not infrequently no later directions are given, with the result that patients continue these hot irrigations, perhaps twice a day, for months, and the means intended for cure becomes instrumental in prolonging and emphasizing the complaint, by inducing chronic pelvic congestion with its consequent leucorrhea. The remedy is simple—namely, that patients should be instructed to regard a hot douche as a temporary expedient, to be replaced as symptoms improve by tepid, cool, and even cold irrigations.

The use of a douche for purposes of comfort and cleanliness must be left in large measure to the discretion of patients; but they should be warned of the harm that may result from its too frequent use, as stated above. Therapeutically, the douche is indicated in three sets of conditions: (1) after labor; (2) after vaginal operations; and (3) in the treatment of inflammatory conditions of the vagina, uterus, and appendages.

1. After labor. When the labor has been normal, with little or no intervention on the part of the attendant, and when the puerperium is also normal, it is open to question whether any form of douche should be used. In skilled hands no harm can result, and in lying-in institutions it is probably an advisable routine procedure; otherwise it is probably better omitted. In cases of postpartum uterine atony or hemorrhage a hot douche is indicated, and when there is reason to fear septic developments a course of douching with mild antiseptics is desirable. In actual septic conditions one or repeated injections of stronger antiseptics may be required.

2. After vaginal operations. Here it is usually necessary to resort to vaginal douches for one or several weeks, either to keep the passages clear of blood, which would tend to decompose and so hinder the healing of wounds, or because there has been much manipulative interference. An aseptic or mild antiseptic solution generally suffices; at times, in septic conditions, a strong antiseptic is needed.

3. In inflammatory conditions. In these cases the douching is generally performed, not by the medical attendant or nurse as in the previous conditions, but by the patient herself or a lay friend. Hence more discrimination is required in prescribing potent solutions. Usually a bland solution is all that is necessary; in a few cases, as in gonorrhea, some stronger antiseptic may be temporarily required.

The fluids to be used for vaginal douching fall into three categories: (1) neutral or aseptic; (2) mild antiseptic; and (3) powerful antiseptic.

1. Neutral or aseptic solutions. Of these the first is plain or sterilized water. For the relief of pelvic pain and congestion this answers perfectly. If a more astringent solution be required we may use alum, one to two drachms to the pint; acetate of lead, one ounce to the pint; chloride of lead, saturated solution; and permanganate of potash (Condy's fluid) in weak solutions. This is one of the most generally convenient on account of its portability and ready solubility.

2. Mild antiseptic solutions. Among these we may mention: boracic acid or borax, two drachms to the pint; sulpho-carbolate of zinc, two to three drachms to the pint; carbolic acid, 1 in 80 to 1 in 40; tincture of iodine, one drachm to the pint; Condy's fluid, two drachms to the pint; cresol, 1 in 250; lysol, 1 in 250; corrosive sublimate or the biniodide of mercury, 1 in 5000; or chinosol, 1 in 8000. Of these, boracic acid, sulpho-carbolate of zinc, and Condy's fluid are perhaps the favorites when prescribing a douche to be used by the patient. Chinosol is comparatively a newcomer, but answers very well. Carbolic acid and iodine are useful for hospital administration. The poisonous character of corrosive sublimate is a contraindication to its indiscriminate use. For milder purposes other things answer as well, and in stronger solutions it should not be used except by the medical attendant. Lysol has the disadvantage of not being readily portable.

3. Powerful antiseptics. These are required after operations, and in obstetric practise, under septic conditions, and in the treatment of gonorrhea and septic conditions of the vagina and uterus. The most important are: carbolic acid, 1 in 40 to 1 in 20; iodine liniment, one to two drachms to the pint; corrosive sublimate, 1 in 1000 to 1 in 4000; and chinosol, 1 in 1000 to 1 in 8000. Of the first three we need not speak in detail, as their merits and demerits are well known. The desideratum is a material that shall be portable, readily soluble, non-toxic, and at the same time a powerful antiseptic. From this point of view a few words may be said about chinosol, which answers these requirements and which, being a comparatively new drug, may possibly not be familiar to practitioners in this country, though used a good deal on the Continent. It is a light yellow powder which belongs to the quinoline group, and is readily soluble in all proportions of water. It is non-poisonous, and for this reason it is especially suitable for use by patients themselves, and its antiseptic action appears to be considerable, being at least equal to that of corrosive sublimate. Where albuminous fluids are concerned chinosol appears to be superior to the sublimate, inasmuch as it does not coagulate albumen; corrosive sublimate, on the other hand, forms an insoluble albuminate of mercury, whereby the antiseptic action is interfered with. Chinosol resembles iodoform in appearance; and if it is intended to be used in dressings or on tampons, as a substitute for iodoform, the chinosol powder requires to be diluted with boracic acid in the proportion of one part of chinosol to five or ten parts of boracic acid.

When strong antiseptic solutions are required for vaginal douching, corrosive sublimate, carbolic acid, and iodine should be used only by the medical attendant; chinosol for use by the patients themselves.

SILVER WIRE AS A SUTURE IN SURGERY.

Nearly half a century has elapsed since J. Marion Sims conceived the idea of using silver wire as a suture in the treatment of vesico-vaginal fistula. No sooner was the idea grasped than his fertile mind began devising ways and means for putting it into application, and a willing patient promptly submitted to its experimental use. After twenty-nine failures with various suture material, the thirtieth operation, performed upon this woman, proved permanently successful.

Not only was this the first case in which a cure was achieved by this distinguished surgeon, but it was the first successful operation for the relief of a vesico-vaginal fistula ever performed in the history of surgery. No wonder, then, that Dr. Sims attributed the brilliant result to the one new factor, silver wire; and no wonder, also, when similar results crowned his efforts in succeeding operations done with the same suture material, he stood ready to announce the edict that the use of silver as a suture was the great surgical achievement of the nineteenth century.

Undoubtedly the use of silver wire in those early cases, with only the crude appliances which he himself devised, and before anything was known of sepsis and asepsis in surgical work, was the factor which gave him success. Why it succeeded in the very cases in which silk suture had failed, was only explicable to him on the ground that silk acted as a seton, while silver did not. The immediate followers of Dr. Sims accepted his edict that silver wire was the only suture that could be used successfully in vesico-vaginal fistula, and used it without further inquiry into the rationale of its action.

As the operation became better understood, and specula and other instruments better adapted to their purpose came into use, operators in various fields were able to secure satisfactory results with suture material other than silver wire; so the sentiment gradually grew that Dr. Sims' success was due rather to the fact that he had better

facilities for doing his operation, and had attained greater skill, than to the nature of the suture material.

Within the past year, however, a satisfactory explanation of the success attending the use of silver wire as a suture has come most unexpectedly from a foreign source. Dr. B. Crede, attending surgeon to the Carola Hospital of Dresden, in an address delivered before the National Surgical Society of Germany, at its twenty-fifth annual convention, held in Berlin on May 28, 1896, discussed silver and its salts, the citrate and lactate, which he termed the itrol and actol, and pronounced them the most powerful of all the surgical antiseptics yet discovered. It appears that his interest in silver as an antiseptic grew out of the observations of his father, the elder Crede, on the value of the nitrate of silver in the treatment of inflammatory affections of the eyelids of infants. Nitrate of silver was not a success as a surgical dressing, however, on account of its chemical instability and its corrosive action on mucous membranes. While visiting the Johns Hopkins Hospital, in Baltimore, Dr. Crede was impressed with the use of silver foil as employed by Dr. Halstead, in affording an antiseptic covering for small or closed wounds. His next experiment, therefore, was made with metallic silver, using it as an antiseptic dressing for wounds. When applied to a sterile wound, he found that it remained unchanged, was non-irritating, and formed a thoroughly aseptic dressing. On the other hand, when applied to an infected wound, the products of bacterial life oxidized the surface of the silver, and, entering into combination with the argentic oxide, formed argentic albuminates which had powerful antiseptic properties. Careful analysis developed the fact that it was lactic acid which was developed in the microbic secretions, and when this combined with the silver oxide there developed a lactate of silver, and in this resided the antiseptic properties.

In this discovery lies the explanation of the value of silver wire as a suture. In aseptic, sterile wounds it is non-irritating and remains unchanged. In infected wounds it supplies in itself the base of a powerful antiseptic, combining with lactic acid, and forming thus in the tissues the lactate of silver.

The experience here recorded illustrates the principle so often insisted upon, that clinical observation has its legitimate field and is a faithful guide, although the scientific explanation of the conditions and results observed are not, at the time, susceptible of a rational explanation. Sims' prophetic soul rested in the belief that some day a rational explanation of the fact he asserted would be forthcoming, and in this recent discovery of Crede it seems to be fulfilled.—*Medical News*, May 29, 1897.

THE TREATMENT OF CHRONIC FRONTAL SINUSITIS AND CONSECUTIVE BRAIN LESION.

BOTEY (*Annales des Maladies de L'Oreille, du Larynx, etc.*, No. 5, 1897) concludes a paper upon this subject as follows: In the case of frontal sinusitis with complete or partial retention of pus, the frontal sinus should be trephined promptly; having been opened, scraped and disinfected, communication should be established with the middle nasal canal by destroying the inferior wall of the sinus and by enlarging the nasal frontal canal. Thus the cavity is drained without requiring the use of a tube, and the opening may be closed. When cerebral troubles develop, such as somnolence and vomiting, etc., perforation of the posterior wall of the sinus may be suspected, with penetration of pus into the cranium. Under such circumstances the posterior wall of the sinus should be opened freely, the granulations should be scraped away, the dura mater should be thoroughly cleansed and explored with a trocar thrust into the encephalon—a procedure without danger if antiseptic precautions are observed. The lesion is curable if the cerebrum is not involved, and even if inflammation has extended to this structure cure can be expected, provided the intervention is speedy and bold. In case of obstruction to the naso-frontal passage, and the perforation of the posterior wall of the sinus, with or without cerebral hernia, the frontal wound should not be closed, since infection may then travel from the nose. The cerebral substance should not be irrigated either with sublimate or carbolic acid, but with a sterilized solution of boric acid.

OPEN MEASURES IN THE TREATMENT OF SO-CALLED SIMPLE AND COMPOUND FRACTURES.

OSCAR H. ALLIS in the *Annals of Surgery* for June, 1897, publishes a practical and interesting contribution to the literature on this subject.

He states that all conceivable fractures were formerly divided into two general

classes, simple and compound. If the skin were not broken—or if broken, if the wound did not communicate with the seat of fracture—the injury was denominated a simple fracture, in contradistinction to all other fractures in which a wound in the skin communicated with the seat of fracture, and this class was called compound.

The treatment for the simple fracture was to approximate the fragments, immobilize them, control undue tendency to inflammation, and finally, with repair, to reestablish the function of the limb.

The treatment of compound fractures was to immediately convert the compound into a simple fracture, and proceed as with simple fractures. Should there be a protruding fragment which resisted all efforts at reduction, saw it off and close the wound. Thus, in a few crisp, axiomatic sentences, the treatment of the whole range of fracture-injuries was placed within the grasp of the student.

There are few who will read these lines that cannot verify their accuracy, and none who read them can instance a greater contrast in the treatment of any surgical affection than the treatment just rehearsed—*i. e.*, the treatment of fractures in former times—compared with their treatment to-day.

Let us take as an example a fracture of both bones of the leg. There is a small wound communicating with the seat of fracture, half or a quarter of an inch in length. The surgeon of to-day cleanses the skin and surrounding parts, isolates the field of operation, freely enlarges the wound in the skin, superficial and deep fascias, until he reaches the seat of fracture and can inspect as well as explore the region of injury. If there are fragments of bone he removes them, if they are likely to interfere with repair; if there are bleeding vessels he secures them. Then, with the best possible exposure of the part, he washes it with pure or medicated water until he has cleansed it of all pollution; and, finally, secures coaptation, not by the awkward and unsatisfactory medium of splints, but by direct coaptation by means of screws, pegs, or some approximating material. Then, without even approximating the soft parts by sutures,—or if at all, but loosely,—the wound is dressed with sterile materials best adapted to absorb any exudation, and the whole enclosed in a plaster-of-Paris dressing and swung from a cradle, or placed upon a soft pillow.

Result, one dressing, and only one, from first to last, and with the removal of this, at the expiration of six to eight weeks, the wound has closed, the bones have united, and the patient is well. No greater triumph for modern surgery!

Contrast such a case with the not infrequent result of a compound fracture in former days. Though the wound healed promptly, swelling soon began to extend from ankle to knee, pus dissected its way through all the parts, until finally an opening was made either spontaneously or by the surgeon, and a pint of pus found exit. Then followed the long term of healing, the wasted muscles, necrosed bone, with often, as a final result, the amputation of the limb as the best possible compromise.

Right here one is met by the interrogatory, Does any one treat compound fractures to-day as they were treated a score of years ago? Is not the student everywhere taught to sterilize the wound and surrounding parts and dress it antiseptically? The answer is Yes; but what the author claims is that the student has learned but half a truth. He regards the wound as an infected wound, but he fails to realize that at the deepest part of that wound—the parts surrounding the fragments of bone and periosteum—his disinfectant cannot reach, and that with all his care in dressing he has done little more for the unfortunate man than was done in pre-Listerian days. What hospital surgeon cannot bear testimony to the accuracy of this statement? What surgeon has not been told on entering his wards that a case of compound fracture has been admitted, the wound syringed out with bichloride, sutured, and dressed antiseptically, and the whole immobilized? And all this is said with an air that betokens a full up-to-date appreciation of the proper thing to do! Some of these cases will do well, and the same is true of some compound fractures treated a score of years ago.

Take a similar injury to the leg, both bones broken but the skin intact. What is the condition? It differs from the former in only one respect, viz., it is not directly infected. In every other respect they are identical. The same laceration of periosteum, deep and superficial fasciæ, the same outpouring of blood between the fragments and muscles, the same displacement of bone fragments. And the question arises, How shall we proceed? In precisely the same way as if the skin were broken. Open up the part with a free incision, carefully divide the deep fascia to the full extent of the seat of frac-

ture, or, better, to the full extent of the external wound; then cleanse the wound of clots, ligate bleeding vessels, repair injured nerves, wire or directly immobilize the fragments, dress without suturing, and encase in plaster as before.

Dr. Allis does not wish to be understood as resorting to open measures in all simple fractures. Such an impression would be very foreign to his honest convictions, as well as to sound surgical practise. What he urges is that very many so-called simple fractures are as grave as the more dreaded compound fracture, and cannot possibly be scientifically treated by other than open measures. Open measures are often unnecessary, would often be injudicious, and yet he claims that they are the only measures that are entitled to the term scientific.

This brings us naturally to the question, Should the terms "simple" and "compound" be retained in classification of fractures? In the light of modern surgery, when there is every rational ground for open measures, shall the term "simple" be retained?

This term has a meaning to the patient, to a prosecuting attorney, and to a jury, that may be foreign to the lecture-room. When a limb shrivels from a pierced nerve, or dangles like a flail from non-union, it reacts with overwhelming force against the attending medical officer. When it is said that he assured the patient, as he undertook the case, that it was only a simple fracture, the argument is that if it had been a simple fracture it would have healed, but through the ignorance of the doctor a very serious fracture had been mistaken for a simple fracture. Nor is such a charge chiefly to be preferred against the general practitioner. It can with equal justice be said of the hospital surgeon. Whoever treats a fracture with unbroken skin must confess that he has treated it ignorantly. Allis has seen six fractures of the elbow-joint, all simple, that resulted in total loss of function of the forearm and hand, and one of them occurred in the hands of Philadelphia's foremost hospital surgeons. Nor was there any evidence of the gravity of the original injury in any of the cases to create a suspicion on the part of the medical attendant of so serious a result. The writer within two years has had two cases of non-union of fracture occur in his own practise, both simple, both under his complete control; the one a femur, the other a humerus. And when later he resorted to open measures he found the cause of non-union to be muscle interposed between the fragments, a condition that could not possibly be detected by palpation and manipulation at the time of setting the limbs, though both were set under the influence of an anasthetic. There is nothing simple about a fracture from a surgical standpoint, and, furthermore, as a definition it is both misleading and impolitic, and should be abandoned.

In the selection of substitute words no one can tell what will become the most popular. The terms "open" and "closed" have been advocated; they are certainly easily spoken, easily remembered, familiar, and not open to the objection that they are misleading. To the author's mind, better terms, though less familiar, are "infected" and "non-infected."

SUCCESSFUL SUTURE OF A PENETRATING WOUND OF THE HEART.

At a recent meeting of the German Surgical Society REHN (*Deutsche Med. Woch.*, May 6, 1897, p. 88) reported the case of a man twenty-two years old who was stabbed with a knife in the left chest and came under observation in a most unfavorable condition, with dyspnea and cyanosis, almost pulseless, and covered with blood. A wound was found in the left fourth intercostal space. The area of cardiac percussion dulness was increased to the right; the heart-sounds were clear. On the following day the condition of the patient had improved, but the area of cardiac dulness had increased. On the third day the condition had grown worse, the pulse failing and the respiration becoming greatly accelerated. The area of cardiac dulness had increased still more and the patient appeared moribund. Operation was decided upon, and an incision was made in the fourth intercostal space, the fifth rib also being divided, and the pericardium exposed. When the wound in this sac was enlarged a large clot was encountered, and an incised wound of the right ventricle 1.5 centimeters long was found. No blood escaped during systole, and it was possible to compress the wound with a finger without embarrassing the action of the heart. Three silk sutures were introduced during diastole and the hemorrhage ceased. The pleura was irrigated with saline solution and, together with the pericardium, packed with gauze. Immediately after the operation pulse and respiration were better. The surgical progress of the case was complicated by purulent pleurisy, necessitating later reopening of the pleura. Except for slightly increased activity of the heart, the condition

of the patient was an excellent one seven months after the accident.—*Journal of the American Medical Association*, May 29, 1897.

SURGICAL SIGNIFICANCE OF GALL-STONES.

Dr. F. LANGE, before the Johns Hopkins Hospital Medical Society, offered the following as the outgrowth of a large experience in the treatment of hepatic calculus: In operating, his preferences have led him to entirely abandon the longitudinal incision; but, according to the proposition of Covisart and the experience of other surgeons, as reported in the *Hospital Bulletin*, he further says he does exclusively the operation parallel to the border of the ribs. Correspondingly to the thickness of the abdominal wall, this incision must occasionally be a very large one. A very great difficulty must occasionally be met with through the smallness of the liver. It is a mistaken idea that in consequence of stagnation of bile the liver must be enlarged. On the contrary, he has had the experience that in occlusion of the common duct of long duration, probably through the influence of pressure, an atrophic condition of the liver-tissue will take place, and occasionally the liver will be concealed high up behind the ribs, and this may cause a great deal of difficulty in consequence of the high and deep position of the field of operation. In eight of these cases he has excised the adjacent cartilages of the ribs, and he would like to commend that. It facilitates the operation very much. On the other hand, the enlargement of the liver may be a great hindrance, and especially in fat and plump persons of short build, it may be quite difficult to get down to the common duct. In one of the cases he was unable, in spite of the excision of the ribs, to get effectually down to the point of the trouble, and not until he had pulled the liver out of the incision as far as he could—almost one-third of the liver substance being brought outside of the abdominal wall—was he able to easily get to the cystic and common ducts. In this case he was obliged to open the cystic duct at two different points, and besides that, the common duct at the usual place about the middle of its course. In the cases of acute inflammation it is necessary, whenever one has reason to presume that the neighborhood of the gall-bladder is infected, to keep everything as open as possible and give entirely free outlet for the peritoneal secretions. At the same time he always drains the gall-bladder with a long tube, with the view of having a siphon action upon the secreted gall, and this will act very effectually. Occasionally a blockade will take place through mucus or blood clot, and then it will be necessary to change the tube or make a cautious washing through it. He would advise against the injection of any irritating antiseptic solution into the gall-bladder. He has observed that occasionally this fluid will cause distressing symptoms, attacks of colic, probably because it may get into the common duct and the hepatic duct and cause irritation. He only uses saline solution or boiled water. He has always found that the bile itself was an antiseptic agent. After a short time the amount of purulent secretion is insignificant, and the healing of the abdominal wounds, although constantly in contact with the bile, is mostly uneventful and without any untoward symptoms.

About stones in the liver substance he has no practical experience. He once found a stone in the liver after it had perforated the walls of the gall-bladder, but he has not had any experience with stones in the liver that have formed in the gall-system above the hepatic duct. It is a fact that these stones will occur—that occasionally quite extensive casts of stone formation will take place in the gall-system. He does not mention comparatively frequent uncomplicated cases, where we have to deal with dilated gall-bladder and stones, and where the surgical treatment is comparatively simple. He never does the operation in two sittings. He finds that it is entirely safe to operate in one sitting. He has always aspirated as much as possible of the contents of the gall-bladder through a thick aspirating needle, protecting the surroundings as cautiously as possible to guard against infection.

He thinks that in some of his cases he has reason to assume that there is some valve action, especially in one case of stone in the common duct, of small size. The patient had had an attack of gall-stone some three months before this attack, with jaundice lasting several weeks, most likely because of obstruction from this stone, which was solitary, as judged by its very round, regular shape. Probably after a time this stone shifted back, and later on again caused obstruction, together with an infection. This we see not uncommonly in cases of obstruction of the common duct. Even if the stones are ball-like or rounded, at intervals a certain amount

of bile will get into the gut. It is almost characteristic that if, in prolonged jaundice, at intervals the condition of the feces and the urine points to the passage of a certain amount of bile through the duct, we have probably to deal with obstruction from stone. Regarding the drainage of the common duct he has tried everything; he has left the duct entirely opened, and has sewed it up with the insertion of a small drainage tube into the lumen of the duct, and he has sewed it up entirely. In cases where the common duct is healthy he thinks it preferable, if it can be done, to sew up the duct entirely. If there is reason to assume that there is obstruction beyond the stone, he would prefer to drain, and he does this in such a way that he inserts a small drainage tube from the wound in the common duct and packs gauze around it. This gauze (iodoform gauze boiled in glycerin) he leaves in for five or six days. The tube he leaves for a sufficiently long time to secure the proper outlet of any secretion as long as it exists. In draining a gall-bladder he packs the gauze around the tube and leaves the opening comparatively large, for the reason that, at least in inflammatory cases, the surface of the gall-bladder is such that it will necessitate some thorough cleansing and local treatment for a limited time. There will be clots of blood or shreds of tissue or inspissated mucus which might easily obstruct. He mostly removes this tampon in two or three days, and gives the inside of the gall-bladder an additional thorough washing and cleansing. Besides this he has either sewed the peritoneum to the surface of the gall-bladder where there was no infection outside of it, or he packed around the circumference of the gall-bladder in such a way that even if some of the contents of the bladder escaped it was not likely to cause a spreading inflammation. A very serious complication that has led to fatal issue in several of his cases of advanced cholemia is an inclination of the patient to bleeding. Three of his cases he has lost from secondary hemorrhages. Two of these cases were complicated with malignant disease of the pancreas. Necropsies were not made, and he could only say that he felt in the region of the head of the pancreas a resistant hard mass which he took for malignant affection. Lately Professor Riedel, a surgeon who has perhaps worked more in gall-surgery than any other man living, has published cases in which he is inclined to assume that occasionally these apparently malignant thickenings of the pancreas may be but inflammatory thickenings, and he mentions one case which seems to be beyond any doubt. In an elderly gentleman, in whom the operation was abandoned, assuming that this was a case of cancer of the pancreas, the stones merely were removed. A fatal issue was awaited, but the patient lived for years and became healthy and strong, and there could be no question about his not having malignant disease. He assumes that through the presence of stones an irritation is kept up in the pancreas, and that this irritation, after the removal of the stone, may cease and the condition improve. The author lost one of these cases by the separation of the Murphy button after establishing cholecystenterotomy. The patient had up to that time had small hemorrhages from the inside of the gall-bladder. The author purposely kept the gall-bladder open, stitched to the abdominal wall, because he had the impression that this would probably be a case of bleeding, and in order to tampon and make counter-pressure he kept the gall-bladder open and was able up to the tenth or eleventh day to check the bleeding, but after the separation the patient had a profuse hemorrhage into the large intestine, and succumbed to anemia.—*Journal of the American Medical Association*, May 29, 1897.

THE USE OF CANTHARIDES AS A REMEDY FOR ANASARCA.

MYSZYNSKA (*Gaz. Heb.*, 11 AV., 1897) states that the use of cantharides as a remedy in anasarca is of extreme antiquity, dating back to Hippocrates. Encouraged by the results of Cazal, who in 1895 reported five absolute cures of acute nephritis by means of tincture of cantharides, the author made use of Barth's service to investigate the effect of this drug in diseases of the kidneys. He first treated ten cases of acute nephritis, administering the drug in doses of from six to eleven drops given in a glass of milk. In the first case persistent albuminuria in a person affected with malaria was completely and rapidly cured. The next case was one which had resisted treatment for seventeen months, the patient being tuberculous. This patient was greatly improved, the tubercular lesion cicatrizing. Three other cases were markedly improved, but disappeared before treatment could be completed. In two pronounced cases complicated by marked arterio-sclerosis, albuminuria was increased by the drug and the symptoms were aggravated. In two other cases of marked nephritis no other effects

were observed. In one tubercular case albuminuria was increased and the temperature was unfavorably affected. In eight out of the ten cases treated by tincture of cantharides diuresis was markedly increased. In all the patients the appetite was markedly increased, sometimes to an astonishing degree, and was not accompanied by any digestive troubles.

The author concludes that cantharides is a remarkable diuretic and a powerful drug in the treatment of refractory albuminuria, especially in recent acute nephritis. It should be given with periods of repose, and should be avoided in cases of arterio-sclerosis.

INJECTION OF ANTISTREPTOCOCCIC SERUM IN CASES OF OPERATION INVOLVING SUBSEQUENT SEPSIS.

WATSON CHEYNE (*Practitioner*, April, 1897, p. 347) accounts for the great variation in the reported results of the treatment of septic trouble by antistreptococcic serum by the acute character of the diseases set up by the streptococcus pyogenes; irremediable damage is done to the body before the immunizing material has time to produce its effect, or, as in two of his own cases, though the local process is arrested the general temperature is not improved, nor the life of the patient preserved. Experimental evidence is strongly in favor of the prophylactic action of injections of antistreptococcic serum; he thinks their use should not be confined to cases in which infection has already occurred, and that it is in prophylaxis that they will be found most valuable, and especially in operations about the tongue or throat in which septic pneumonia engendered in most if not in all cases of the streptococcus pyogenes is frequently the cause of death. In a recent case of carcinoma involving the base of the tongue, the anterior pillar of the fauces, the tonsil, and also the large glands in the anterior triangle of the neck, Cheyne, on the two days before operating, injected twenty centimeters and ten centimeters of antistreptococcic serum; and after a preliminary tracheotomy extirpated the glands, ligatured the external carotid, split the cheek, and removed the diseased parts of the mouth and throat. Ligature of the external carotid greatly facilitates such an operation and diminishes the immediate danger, but is a very fatal proceeding owing to sloughing and secondary hemorrhage. Here there was nothing of the kind. The progress of the case was very remarkable; after the first twenty-four hours there was no elevation of temperature; a rise, evidently an after-effect of the serum, occurred some days later; there was no septic pneumonia, no tendency to septic infection, no inflammation, no sloughing of the surface of the wound; there was an almost entire absence of smell in the breath. Healing was quite uninterrupted. In a case of malignant disease of the left side of the lower jaw, inside of the cheek, and anterior pillar of the fauces, and extending to the alveolar process of the upper jaw and some small cervical glands, injections of twenty centimeters were made on February 15 and 16, and one of ten centimeters on the 17th, a few hours before the operation. The skin healed by first intention, and the wound in the mouth rapidly granulated without any sloughing; there was no elevation of temperature after the first twenty-four hours, and then it did not exceed 100.4°, and the case was most striking from its absolute freedom from septic complication. In a third case, after preliminary extirpation of a large mass of glands from the neck, ninety centimeters was injected during the four days preceding the removal of the tongue. There was the same freedom from septic trouble, and the same absence of smell, and everything promised well till the patient suddenly expired. An embolus detached from a thrombus in the lingual artery, which had extended into the carotid, had lodged in the brain. Though a certain amount of sloughing was found at the back of the wound, the greater part was quite clean and free, and there is no reason to doubt that but for this unfortunate accident healing would have been uninterrupted. Extensive operations will be far more feasible if the septic pneumonia and the diffuse septic processes so apt to follow them can be prevented by the prophylactic use of antistreptococcic serum.—*British Medical Journal*, May 15, 1897.

COLLES' FRACTURE.

Dr. STORP (*Archiv. f. Klin. Chirurg.*, bd. 53) employs a simple method of treatment which is essentially the same as was advocated many years ago by Sir Astley Cooper.

Storp has treated one hundred and four patients in this manner: A strip of rubber plaster 2½ inches wide is wound about the arm just above the wrist-joint. A second piece is placed exactly over the first, a fold

being made in it on the radial side, which stands out far enough from the arm to allow a large hole to be made in it. Through this hole a string is passed, and the arm is held high up on the chest, the hand dropped downward toward the ulnar side. The treatment is at first rather painful, but if the arm is kept high up venous congestion is avoided, and the pain becomes much less. The plaster is removed in ten days and the hand simply placed in a sling, while the patient is advised to use it carefully. In a few of Storp's cases in which there was extensive hemorrhage massage was employed. The average duration of treatment was three weeks, while fourteen to eighteen days sufficed in patients under twenty years of age. The results were exceptionally good. Of the ninety-five cases in which directions were carried out, the arms of ninety-one were completely restored in appearance as well as function; in four the functional result was good, but there was a slight radial deformity in three cases, and a rather marked radial deformity in the fourth. —*International Journal of Surgery*, June, 1897.

ANESTHESIA OF THE POSTERIOR URETHRA.

SCHARFF (*Centralblatt für die Krankheit. der Harn. u. Sex.-Org.*, vol. 8, 1897) states that the posterior urethra can be rendered absolutely non-sensitive by the following rectal injection:

℞ Morphine hydrochlorate, 3 grains.
Atropine sulphate, 1-10 grain.
Distilled water, 2 fluidounces.

From half a drachm to a drachm of the solution made in these proportions is injected into the rectum.

HEPATIC FISTULA SUCCESSFULLY CLOSED AFTER SIXTEEN MONTHS.

MOIR reports the following case in the *British Medical Journal* for April 24, 1897:

An Armenian aged twenty-seven years, while employed in railway construction at Selangor in the Straits Settlements about the middle of December, 1893, began to suffer from what eventually proved to be an abscess of the liver. He was admitted into hospital at the end of January, 1894. Early in March he was operated on for an abscess of the liver. Six weeks later he was discharged apparently cured, the wound having closed. He sailed for Singapore, but the wound reopened on the voyage, and there was a copious purulent discharge. On arrival at Singapore he went into hospital, and a drainage-tube was inserted. The wound was again healed by the end of June. After remaining six weeks longer the sinus reopened and again began to discharge pus. Accordingly he sailed for Calcutta, and was admitted into the hospital on September 4, 1894. No antecedent history of dysentery or drink could be elicited. On admission he was in rather a reduced condition, weighing only 123 pounds. The liver was of natural size, but there was a hepatic fistula discharging unhealthy pus in the eighth intercostal space and pretty far back into the infra-axillary region. On September 6th the first attempt to close the sinus was made. An incision was made to explore for dead bone, but the ribs were quite healthy. After a little manipulation the fistula was found to be very narrow, slightly tortuous, and six inches long. Its track was dilated so as to admit a long and narrow drainage-tube. On the 10th the patient was transferred to Moir's wards and continued as his patient until he finally left the hospital in October, 1895. Syringing with iodine lotion and insufflation with iodoform were tried, but ineffectually. Then on September 28th, 1894, an inch and a half of the eighth rib was resected in the region of the fistula. The channel was over six inches, very narrow (admitting only a fine probe or a knitting needle), and had dense walls which felt almost cartilaginous in consistence. In its course the fistula traversed the pleural cavity (the pleura being adherent around it), the diaphragm, and a considerable thickness of liver tissue near the upper surface of the right lobe. The track was dilated gradually with some difficulty, until finally a cavity was reached. The finger could just reach this cavity; but it was estimated, with the help of instruments, that it was about the size of a hen's egg, and that it had thick walls. A collection of pus, caseous material, and sloughy tissue was removed by a long-handled Volkmann's spoon. A drainage-tube having a diameter of three-quarters of an inch was inserted. For the next two or three days the patient suffered from acute epigastric pain, nausea, and vomiting; but after October 1st, there was no further trouble. Up to the end of November his physical condition was good, and he weighed 138 pounds, having gained over a stone; but the fistula would not heal, and at this time was two and a half inches long.

Although the discharge had become scanty it frequently contained bile and mucus for several days at a time—and the bile seemed to retard healing. Various solutions were tried for syringing the fistula—*e.g.*, carbolic acid, perchloride of mercury, boric acid, thymol, iodine, iodoform in ether, and sulphate of zinc. The tube was gradually shortened, then smaller tubes were substituted, and finally when the fistula narrowed a strip of lint was inserted. Bark and ammonia and hypophosphites were given, and on several occasions sponge grafting was tried, but nothing succeeded. In December he began to lose ground again, and the length of the fistula varied from three to four inches. The discharge contained flaky pus, occasionally bile, and tenacious glairy mucus. The wound was syringed twice, sometimes thrice, a day. This improved the character of the discharge. On December 18th an incision was made through the former cicatrix, and the fistula was slit up and dilated. The cavity was now smaller and more shallow, and so could be better explored by the finger. The dense connective tissue lining the walls of the fistula and cavity for the entire length of the track was thoroughly scraped with a Volkmann's spoon and the debris removed; then the entire raw surface was well swabbed with a solution of chloride of zinc (forty grains to the ounce) and a large drainage tube was introduced. This operation was not attended with any serious hemorrhage. That night and next day there was cough, bilious vomiting, and epigastric pain. The drainage-tube seemed to irritate the diaphragm, but after the first two days he had little pain or discomfort. In January, 1895, he began to improve again. The fistula became smaller and the discharge less; but still the dressings were often bile-stained. Quinine and iron, nitro-muriatic acid, and nux vomica were administered. During February his general health was excellent, but the fistula remained much the same. Syringing and insufflation were discontinued, and a probe covered with cotton-wool and dipped in compound tincture of benzoin was daily inserted in the fistula. This proved more efficacious than anything hitherto tried; still, the track would not close, and the discharge contained bile at intervals. In March the same treatment was continued and the discharge almost ceased, but the fistula was still nearly two inches in depth, so on March 22d he was sent on a voyage in the hope that the change and sea air might prove beneficial. He returned to hospital on May 24th. The trip had apparently done him more harm than good. He looked worse and said he had felt miserable all the time that he was at sea. The sinus was two and a half inches long and had been constantly discharging bile, mucus, and pus. His weight was 131 pounds. He was given a tonic mixture, the wound was dusted with alum and iodoform, and a dry dressing of perchloride of mercury was applied. Early in June minute particles of nitrate of silver were inserted into the fistula, which remained about two inches long and continued to discharge bile occasionally. His weight rose to 136½ pounds. On June 8th a probe heated red-hot was introduced and the walls of the track were thoroughly cauterized. This was the only operation which was followed by fever, and the febrile reaction was severe. Next day his temperature rose to 102° F., on the following day it varied from 100° to 104.2°, on the 11th from 101° to 104°, and on the 12th from 101.8° to 105.4° F. He was very restless and suffered from intense headache, and the discharge was profuse, greenish, and viscid. On that day he developed acute orchitis and epididymitis without any obvious cause. This was treated by free leeching and an evaporating lotion. By June 18th the fever had quite left him and he again began to improve, but the fistula had increased to three inches. The right testis remained large, and on the 22d fluctuation was discovered, and his temperature again began to rise. An abscess in the globus major of the epididymis was incised and drained. He was given a mixture of strychnine and iron, with sulphate of magnesia occasionally, and powdered boric acid was applied to the fistula, and a dry dressing. Early in July an emulsion of eucalyptus oil was injected into the fistula, which was again two and a half inches long. The track began to contract rapidly, and by July 8 the fistula was occluded and there was no discharge. The fistula soon firmly healed and subsequently gave no further trouble. He remained under observation until September 16, when he was discharged feeling perfectly well and strong. But four days later he was readmitted suffering from an anal abscess, which was incised on the day after admission and the wound healed readily. He was finally discharged on October 7, 1895, at which time the scar of the hepatic fistula was quite firm and the liver seemed sound.

This case is of some interest owing to its

obstinate course, to the number of operations performed, and to the intercurrent complications. The persistence for sixteen months of a hepatic fistula, after an abscess of the liver was opened, illustrates the evil of the too early removal of the drainage-tube. Probably, also, too small a tube was used in the first instance. For the drainage of an abscess of the liver the larger the tube the better, and there should never be any hurry to dispense with the tube. *Festina lente* is just as important a principle in the after-treatment of an abscess of the liver as is the avoidance of delay in operating when once the abscess has been diagnosed. Quite a variety of causes were at work to prevent the closure of the fistula: (1) There was the absence of surgical rest owing to the cavity and fistula having such close relations to the diaphragm, a muscle which is never at rest; (2) the course of the fistula was somewhat tortuous through the various layers of liver, peritoneum, diaphragm, pleura, intercostal muscles, and skin; (3) there resulted consequently an ill-drained cavity at the end of a long and sinuous passage, which would not heal owing to retained sloughs; (4) the escape of bile and mucus from time to time through the fistula caused irritation and retarded union; and (5) the chronic nature of the case tended to further the formation of a lining of dense cicatricial tissue in the walls of the fistula, which, until it was destroyed, of itself precluded the possibility of closure.

EXTROVERSION OF BLADDER TREATED BY LEFT NEPHRECTOMY AND TRANSPLANTATION OF THE RIGHT URETER THROUGH THE LOIN.

REGINALD HARRISON (*Medical Record*, May 1, 1897) details an interesting case.

The subject of the treatment the author is about to describe is a boy now aged fifteen years. He is the victim of a congenital exstrophy of the bladder and an epispadiac penis with the pelvic cleft. He first came into hospital in July, 1895, for the deformity mentioned. There was a considerable protuberance of the posterior wall of the bladder, upon which the orifices of the ureters were distinctly visible. The exposed mucous membrane was very sensitive, and readily bled upon being touched either by the hand or by the clothes, and the thigh and legs were much excoriated by the constant dripping of urine from above. The patient's condition was a very miserable one, and he was much emaciated on his admission to the hospital. Shortly after his reception he showed signs of having contracted scarlet fever, and was consequently removed to a hospital for infectious diseases. For some weeks after this his urine remained slightly albuminous.

On his readmission, after satisfying himself that both kidneys were in good working order, and the urine healthy, on January 17, 1896, Harrison removed the left kidney by lumbar incision. The patient recovered rapidly and completely from this preliminary operation. With the view of allowing ample time for the purpose of enabling the remaining kidney to grow and to provide for the entire urinary excretion, the patient went home for some months, occasionally returning for observation.

He was again admitted to the hospital in November, 1896. His legs and thighs were still much excoriated by the constant dripping from the single ureter, and the protruding mucous membrane of the posterior wall of the bladder remained scarlet and sensitive. Repeated examinations proving that the excretion of urine had been effectually carried on by the solitary kidney during the period of nearly eleven months which had now elapsed since the preliminary nephrectomy, the right ureter was transplanted on December 5, 1896, in the following manner:

A flexible bougie was passed up the solitary ureter so as to serve as a guide for finding the canal as it crossed the brim of the pelvis. A small incision was then made in the right loin on the same lines as if for a lumbar colotomy. By a little deep dissection the ureter was readily found and exposed. A carbolized silk ligature was placed upon it just below where it crosses the common iliac artery, and the tube was then cut across on the kidney side of the ligature and brought out into the loin wound. To the latter it was attached by one fine silk suture. There was very little bleeding and the whole proceeding occupied only a few minutes. The loin wound was partly closed by a suture at either end, but not so as to occlude the ureter. Before the patient left the operating-room urine was seen issuing from the transplanted ureter. A pad of absorbent material over the wound completed the dressing. It was noticed that, as the ureter was being transplanted, retching and attempts to vomit became continuous.

The patient also vomited at frequent inter-

vals for twenty-four hours after the operation. This immediately ceased at the expiration of this period, when in the course of his usual visit to the hospital Dr. Harrison removed the little suture which attached the divided end of the ureter to the loin wound, and which had evidently been keeping up some tension on the former. The now disused and protruding posterior wall of the bladder was covered with lint and vaseline, and the patient was placed on a light but nutritious diet.

For ten days after the operation the patient's condition was in all respects most satisfactory, the discharge of urine from the loin wound being, as far as he could judge, free and normal. Then followed a series of high temperatures, which continued from December 16 to January 29. On December 23 the temperature was 105.3° F., while on December 24 it fell as low as 97.4° F. These variations continued up to January 29, when the normal level was again maintained. No rigors were noticed, though there was sweating and occasional vomiting. At times the patient was evidently drowsy, but he seldom complained of feeling ill and was generally in good spirits and took his food with appetite. On January 7 he was allowed to get up on a couch, and since that date he has steadily improved in every respect.

Different causes were assigned for these variations in temperature. At first it was thought that they were due to influenza. Then it was suggested that some suppuration was going on. But the evidence was insufficient. The urine as collected from the ureter was clear and contained only a slight trace of pus, which was probably derived from the external wound. It seemed more likely that either the eliminating function of the kidney had been disturbed, or that these variable temperatures were due to changes directly connected with the absorption of the unused mucous membrane of the bladder, which was now rapidly going on. It is to be regretted that at this stage no qualitative examination of the urine was made, which might have thrown some light upon the point.

The boy was greatly benefited by the change in the mode of urination. He is able to maintain the erect position, and moves about comfortably, being quite free from excoriations about his thighs and legs. His general condition is also much improved. Nothing has yet been done to close in the posterior wall of the bladder, as it appears to be slowly undergoing a process of cicatrization. It would, however, be quite easy to effect this by a plastic operation, now that the surface of the bladder wall is no longer in contact with the urine.

Harrison calls attention to the difference in the condition of the urine trickling from the ureters in these deformities, mixed with the abundant glairy excretion of mucus from the surface of the exposed membrane of the fissured bladder, as compared with the excretion that escapes from the artificial fistula in the loin, as in this case. In the former instance the excretion is irritating and offensive, with a strong tendency to form phosphatic calculi upon nuclei provided by the pubic hairs; while in the latter these characteristics are absent, and the presence of the patient ceases to be in these respects a cause of offense to others.

Though in this instance the treatment was undertaken solely with the object of ameliorating the patient's condition, it is possible that a similar proceeding, or some modification of it, might be utilized in connection with the treatment of other forms of urinary disease. He refers more particularly to the extirpation of the entire bladder for malignant as well as for advanced forms of suppurative diseases. Cases are occasionally met with in which, if it were possible to dispense with the bladder as a receptacle for the urine, its total removal might be safely and advantageously undertaken.

Over four months have now elapsed since completion of the operation.

Reviews.

DISEASES OF THE EAR, NOSE AND THROAT AND EXTERNAL CAVITIES. By Seth Scott Bishop, M.D., LL.D. Philadelphia: The F. A. Davis Publishing Company. 1897.

In the preface of this book Dr. Bishop tells us he has written it because of frequent requests received from medical students that he should prepare such a work, and he has also designed it for the purpose of aiding the practitioner of medicine after his graduation. As may be imagined from its title, the book attempts to be quite exhaustive. The first part is devoted to a consideration of the anatomy of the parts which are to be treated, and then follows a somewhat lengthy consideration of the various forms of compressed air apparatus, vaporizers, and inhalers which are used commonly in the treatment of dis-

eases of the upper air passages. An examination of the text and the cuts shows that he quotes freely from contemporaneous writers, notably Sajous, Burnett, Tuttle, and Ingals.

As in most of the books issued by The F. A. Davis Publishing Company, numerous good illustrations will be found all through this volume, the most notable of which, perhaps, are the colored plates made by Burk & McFetridge of Philadelphia, which decorate so usefully the well known volume upon Diseases of the Nose and Throat by Dr. Charles E. Sajous.

The very large number of illustrations which are used for the elucidation of the text is shown by the fact that there are no less than 168 in this volume. As the title would indicate, the book begins with the consideration of Diseases of the Ear, then passes on to the consideration of Diseases of the Nose, and finally considers the subject of Diseases of the Throat. Some of the illustrations, as for example those on page 13, do not seem to us of any particular value, as they simply illustrate the arrangement of a physician's office in which he devotes himself to the treatment of the diseases with which this book deals.

Considering the extraordinary growth of the three specialties which are embodied in this volume, we can congratulate the author upon having produced a most successful condensed view of the treatment of affections of the head. In the article on the serum treatment of diphtheria Dr. Bishop does not speak as if he had used it, and a large part of the text concerning this subject is in quotation marks and taken from other writers.

THE MENOPAUSE. By Andrew F. Currier, B.A., M.D. New York: D. Appleton & Co., 1897.

This is a small octavo monograph on the subject of the climacteric, which extends over 281 pages and to which is added an index of authors and a general index of subjects.

As with all the books which are issued by this firm, it is a good specimen of book-making. When we come to the consideration of the volume itself we find that it deals in an interesting way with the changes which are supposed to take place in the human female who has passed middle life. The endeavor of the author has been to show the exact limitations of this physiological process, and he has also endeavored to prove that the development of the menopause does not render the woman peculiarly susceptible to certain diseases, especially cancer of the womb and breast. With these objects in view he has embodied the results of a large amount of collateral reading and his own personal experience. Several of the chapters are provided with copious bibliographies, and a large amount of statistical information is given in regard to both human beings and the lower animals. The influence of great fertility upon the early development of the menopause, of prostitution, of gastro-intestinal disturbances, and of various other factors is also carefully considered. The book is exactly what it professes to be—a careful summary of our knowledge in regard to this important subject—and Dr. Currier from his very considerable experience is well qualified to produce such a monograph.

THE LIVER OF DYSPEPTICS, AND PARTICULARLY THE CIRRHOSIS PRODUCED BY AUTOINTOXICATION OF GASTRO-INTESTINAL ORIGIN. By Dr. Emile Boix. Authorized Translation by Paul Richard Brown, M.D., U. S. Army.
New York: G. P. Putnam's Sons, 1897.

It is evident from the title of this book that it deals with that interesting theme "autointoxication," a subject which has engaged the attention of French clinicians for several years and to such an extent as to lead them at times, we fear, to reach conclusions which only great enthusiasm can justify. Clever and enticing as the hypothesis of autointoxication may be, we often find in practical medicine that the theory scarcely holds good. When it comes to ascribing hepatic cirrhosis to this cause we think it is carrying the matter a little beyond the bounds of likelihood.

The first chapter deals with the general consideration of the subject, and the second with the poisons of the alimentary canal, while the third discusses the conditions which favor the production of these poisons. The second part of the book is devoted to the liver of dyspeptics, the liver and its poisons, and then in the succeeding chapters the author devotes himself to the proving of his thesis by discussing what he calls dyspeptic cirrhosis and its pathological anatomy. The last part of the book deals with a summary of the experimental work which has been done in the line of producing cirrhosis, then with the author's own studies, and ends with a recapitulation of the subject. The object of the author all through his essay is to prove the existence of a cirrhotic change in the liver peculiar to what he calls dyspepsia. He also believes that butyric acid and lactic, valerianic, and especially acetic acid, are

formed in the intestine, and that these acids have a peculiar power of acting as sclerogenic agents on the hepatic cells. The therapeutic deduction from the whole research is found in a single line, the last in the book. It is that calomel is the best remedy, in the dose of one centigramme.

SYSTEM OF DISEASES OF THE EYE. By American, British, Dutch, French, German, and Spanish Authors. Edited by William F. Norris, A.M., M.D., and Charles A. Oliver, A.M., M.D. Volume II. Copiously illustrated.
Philadelphia: J. B. Lippincott Co., 1897.

We have already spoken in terms of high praise of the first volume of this System, which appeared during the past winter. The present volume contains articles written by fifteen contributors, one assistant contributor, and three translators, and deals with the important subjects of the examination of the eye, school hygiene, statistics of blindness, and antisepsis.

The opening article is on the Methods of Determining the Acuity of Vision, by Herman Snellen of Utrecht, Holland, his article being translated by the well known Scotch ophthalmologist, Mr. Berry. It is hardly necessary to point out that an article on this important subject by one who has taken so much interest in it is of practical utility and worthy of the System to which it is contributed. The same author also contributes the succeeding chapter on Mydriatics and Myotics, and we feel a little disappointed in its brevity, for we think that this important subject might have been extended beyond the short space of fifteen or sixteen pages. It does not seem to us that the various studies which have been made as to the manner in which mydriatics produce their effects have received sufficient attention in this paper.

The third chapter is upon Lateral Illumination and the magnifying instruments employed in combination with it, and is written by Laqueur of Strasburg, the translation being made by Dr. Friedenwald of Baltimore. This chapter extends from page 47 to page 61, and is followed by one upon the Ophthalmoscope and Art of Ophthalmoscopy, by Dr. George M. Gould of Philadelphia, which extends over twenty-four pages. Here, again, we are surprised at the brevity of the discussion of such an important subject in so large a System. Very properly the chapter upon Skiascopy (the Shadow-Test, Retinoscopy) and its practical application has been given to Dr. Edward Jackson of Philadelphia, whose work upon this subject is well known to the profession; while Adolph Javal, Jr., discusses Ophthalmometry and its Clinical Applications very appropriately.

Dennett of New York contributes a chapter upon Prisms and Prismometry, and Stevvens of the same city, so well known as an expert on the subject of the balance of the ocular muscles, writes upon this topic.

The Detection of Color Blindness is discussed by Dr. William Thomson, assisted by Dr. Carl Weiland.

The chapter upon Blindness: its Frequency, Cause, and Prevention, by Dr. I. Minis Hays, of Philadelphia, is one which is strongly fortified by valuable statistics.

From what has been said so far it must be evident to our readers that the editors of this System have been peculiarly fortunate in obtaining writers of high authority upon the various subjects. Almost every contributor is recognized as a law-giver in the study of the subject of which he writes, and those who have edited a System know how difficult it is to obtain the very best authors for special subjects.

The volume ends with a very complete index and list of contributors to the System, and a schedule of the various articles which will make up the complete system. Both editors and publishers deserve great credit for placing before the profession a most valuable encyclopedia, and we trust that their efforts will be fully appreciated.

SYSTEM OF SURGERY. Edited by Frederic S. Dennis, M.D., assisted by John S. Billings, M.D. Volume III. Illustrated.
Philadelphia: Lea Brothers & Company.

The writer of this notice has but to repeat the good words given the two volumes of this System previously reviewed in the THERAPEUTIC GAZETTE. The following subjects are discussed: Surgery of the Larynx, Tongue, Jaws, Teeth, Salivary Glands, Neck and Chest; Diseases and Surgery of the Eye and Ear; Surgical Diseases of the Skin; Surgery of the Genito-Urinary System; and Syphilis.

The name of its editor, Frederic S. Dennis, and of such contributors as George E. de Schweinitz, J. William White, Robert W. Taylor, William A. Hardaway, Louis McLane Tiffany, and H. H. Mudd, will serve as a hall-mark to the busy practitioner and careful student, that in selecting this work he is obtaining the latest information on the subjects discussed and many practical methods embodied in the most concise language.

The book contains 919 pages, including an adequate index. The publishers are to be

congratulated on the book-making part of the work; the type is clear and the text elucidated with many illustrations and a number of colored plates.

We bespeak for this volume a continuation of the success attending the appearance of its predecessors.

Correspondence.

LONDON LETTER.

By Raymond Crawfurd, M.A. Oxon., M.D., M.R.C.P.

The past month has been devoted wholly and entirely in one or other form to Jubilee celebrations. The medical societies have all closed their doors for the summer, and the current medical journals are sufficient evidence of the general stagnation of matters medical. Following the example of the *Practitioner*, to which we alluded in our last letter, most of them have blossomed out into a Jubilee number. The occasion is most certainly a favorable one for retrospection, as everything is pervaded with a supersaturated holiday atmosphere, and nothing is a-doing. Even about the hospitals there is a sense of listlessness; many beds are empty, and the out-patient departments are sparsely attended, and all because for the moment the public has something that interests it more than its own ailments. With only a month remaining until the hospitals begin their annual closing for cleaning and repairs, we hardly look forward to a great awakening until the commencement of the winter session. Only the children's hospitals are busy, as the extent and intensity of any great national rejoicing may usually be expressed in terms of infantile diarrhea. London is now slowly emerging from its casing of wood, and the din of hammer and saw and axe is silent; there are still only too obvious signs of an overflow population, but with the return of visitors and the approaching end of the London season, the streets are daily becoming more passable. Only a week since "All board and no lodging" was a terse but truthful description of existing conditions, with every house along the route hidden in hoarding and tenanted two deep from cellar to garret.

The distribution of medical honors will be generally approved by the profession both by reason of the fitness of the recipients and the numerical limitation. None is more thoroughly deserved and none will be more generally welcomed than the knighthood bestowed on Dr. W. R. Gowers, who has won so high a reputation in this country and on the Continent for his investigations of diseases of the nervous system; over and above this there is probably not in London a more fascinating teacher, both at the bedside and on paper. The medical honors are fitting recognition of the enormous advances that have been made in all departments of the healing art during her Majesty's reign. Her Majesty looked wonderfully well, and bore the heat and toil of the day without any undue fatigue, and that this should be possible after seventy-eight summers, if not a tribute to the skill of modern medicine, is valuable testimony to the benefits of fresh air, in which her Majesty has so much faith —an example that might be followed to advantage by more of her subjects. In spite of the enormous crowds that witnessed the procession on Jubilee Day, the casualty list was exceedingly trivial, and but little work was forthcoming for the extensive ambulance service provided at stations all along the six miles of route. Besides the ambulatory contingent in the crowd, armed with stretchers and sal volatile, temporary hospitals afforded possible accommodation for some hundreds of patients. Happily these were not requisitioned at all. Such cases as required attention were mainly attacks of faintness, and these in the majority of instances could not be attributed to the crowd so much as to the self-inflicted exhaustion which inevitably results from commencing a holiday in summer at sunrise, more especially after a night made hideous by the din of preparations for the morrow. As a fact the streets were never at any period of the ceremony densely crowded, as with the persistent fall in prices the large majority of sightseers had provided themselves with seats in the course of the last few days. Syndicates and dealers in seats will hardly join in the general rejoicing, as in this undertaking almost as much money was lost as gained. And no one has a word of pity for them, as this state of affairs was entirely brought about by their rapacity in the early days of seat selling. Very many who would gladly have taken a seat at a reasonable figure were unable to do so at the figure demanded at first, and made their plans accordingly to spend the day in peace and quiet away from the metropolis. The knowing ones held their purse strings until the "slump" set in, and during the procession people were seated side by side

who had paid as differently as fifteen guineas and half-a-guinea for their seats, and only because the latter had waited to the last moment. The absence of a single casualty in connection with newly-erected stands and house accommodation testifies to the thoroughness with which the official inspection was carried out. This is amazing to anyone who saw the rickety floors on which hundreds of sightseers were accommodated on seats raised from the anterior inferior to the posterior superior angles of rooms, so that the uppermost ousted the flies from their privileged habitat on the ceilings. Zaccheus is still with us, and falls from trees were accountable for one or two serious accidents, which otherwise were chiefly conspicuous by their absence. Enquiry at the hospitals along the route showed that very few casualties, trival or otherwise, were treated at these institutions. The weather was certainly conducive to this end, as the morning opened cool and cloudy, and it was only just as her Majesty left Buckingham Palace that the sun shone out brilliantly. Another factor was the provision of abundant water all along the route by standpipes fitted with drinking-cups. Still it would be absurd to suppose that the British public celebrated their holiday exclusively on that innocuous beverage—even in this age of enlightenment of the masses there still lurks an ill-founded prejudice to its adoption both for internal and external application. However, there was a quite remarkable absence of drunkenness both during the day and at night, and nothing in Jubilee Day can be a more sincere subject of rejoicing than the gradual and evident growth of temperance among the working classes. It represents the clearing of a cloud that has overhung the domestic happiness of the nation, and the casting out of a canker that has blighted the nation's supreme prosperity. There are rumors of legislation dealing with habitual drunkards, but we fear that it is not in the near future. While our rulers are largely publicans, we cannot look for severe disciplinary treatment for bibulous sinners.

The Prince of Wales Hospital Fund has hung fire: every one's purse has been heavily taxed in one or other way for the Jubilee celebrations. It was anticipated that the total would be swelled by one or more large individual benefactions; but such of these as have been forthcoming have been devoted to other objects. Sir Blundell Maple has given the magnificent sum of £120,000 for the rebuilding of University College Hospital in the most modern style of hospital construction, while Mr. Lipton's £25,000 has already found its way in the form of beef and plum-pudding into the stomachs of the Princess of Wales' poor. Then again the charitable public would have liked some clearer assurance of the ways and means of distributing the sum collected. Every one is agreed that such matters as these should be the duty of a Central Hospital Board, but there is great diversity of feeling as to the constitution of that Board. The sum already collected will provide an annual income of something like twenty-five thousand pounds a year, instead of the hundred or hundred and fifty that was hoped for. We do not now look for any very substantial addition to this sum, although no doubt a considerable sum will be derived from the sale of the Prince of Wales Hospital Stamp, and of the shilling illustrated Jubilee programme that was sold all along the route on the day of the procession. We cannot at present form any estimate of the extent to which this special appeal will interfere with the regular income of the hospitals. Hospital secretaries have already realized that in this respect the original intention of the fund, to appeal to a class other than the regular subscribers, has not been maintained.

We have little to bring to your notice in current medical literature: Sir Richard Quain read an interesting paper to the Royal Society on the "Mechanism by which the First Sound of the Heart is Produced." The author ruthlessly upsets the theories on which the present generation was nurtured. Neither the closure of the auriculo-ventricular valves nor the muscular contraction of the ventricular walls is a factor in the production of the first sound. The tension of the auriculo-ventricular valves is put out of court by the fact that the first sound is distinctly present in reptiles, in which the auriculo-ventricular valves exist only in a rudimentary form. Thus in the python, which was employed to demonstrate the fact, the valves are merely muscular flaps, destitute of *musculi papillares* and *chordæ tendineæ*, and of any mechanism for producing valvular tension. Clinically, too, this is consonant with the fact that in the presence of a loud systolic murmur of mitral regurgitation at the apex, we frequently hear a normal first sound at the base of the heart. Again the muscular contraction of the walls of the heart during systole cannot be the source of the first sound of the heart. In the first place it is totally different in charac-

ter from the gentle purring sound produced by the contraction of large muscles in other parts of the body. On this point the experimental results of Quain stand in absolute contradiction to those obtained by Ludwig, Krehl, and Kasem-Beck. He finds that although the heart continues to beat, the first sound is absent whenever the circulation in the heart is stopped by clamping the large veins that bring blood into the heart; this also is the case with the turtle's heart after removal from the body. The author turns to his own use another class of experiments which have been employed to show that the contraction of the muscle is a source of the sound. Hürthle and Einthosen have shown by graphic methods that the first sound begins with the very beginning of the systole, before the ventricle has got power to open the valves; and this brings us to the constructive portion of Sir Richard Quain's communication. In this he endeavors to show that the first sound of the heart is produced by the impact of the blood driven by the action of the muscular walls of the ventricles against the block produced by the columns of blood in the pulmonary artery and aorta, which press upon the semilunar valves. "Sound is a phenomenon resulting from resisted motion." Within the left ventricle the motion of the blood stream is in three spiral columns, which are concentrated into one similar stream before reaching the orifice of the aorta: by this "rifle" mechanism a maximum precision and velocity is imparted to the moving columns of blood. The resistance to this current of blood from the ventricle is represented by the weight of the column of blood resting on the aortic valves. Normally the ratio of the driving power to the resistance is as four to three. Sir Richard Quain submits that the first sound of the heart is the product of these two factors, and that it is produced at the aortic valves, although owing to the anatomical relationships of the heart the sound is best heard at the apex. In conclusion he describes a simple experimental mechanism by which sounds resembling the first (and second) sound of the heart can be produced artificially in accordance with this explanatory theory.

At the Royal Medical and Chirurgical Society Dr. Dickinson read a paper on "Musical Mitral Murmurs in Connection with Aortic Stenosis." The murmur might be due either to actual disease or to relative incompetence of the mitral valve, but in all probability the peculiar squeaking or even musical character of the murmur was due to the force under which the mitral regurgitation was produced, perhaps reinforced by the narrowness of the orifice of escape.

PARIS LETTER.

By A. R. Turner, M.D. (Paris).

It is not necessary to leave France in order to see strange customs, though usually it is only by chance that one learns of the existence of the curiosities in the social life of the various regions of this country.

Recently a tourist discovered not far from Paris (70 kilometers, less than 50 miles away) some individuals whose mode of life was so singular that it was thought worth while not only to give a description of them in the *Revue de l'Ecole d'Anthropologie*, but even to make an excursion to their dwelling-place in order to see them.

In the valley of the river Eure, in the department of the same name, and to the west of Paris, there are to be found, about one kilometer from the village of Ezy, a series of caverns dug in a hillside overlooking the river. These caverns are in three rows, one above the other, and give out onto platforms of earth built in front of them. They probably date back to the middle ages. Nearby are to be seen the ruins of a few houses.

About eighty persons, more or less, inhabit the caves. They are men, women, and children. They live in the greatest degradation, by begging or petty thieving, and carry on no occupation of any kind. Their clothing is filthy, and in many cases hardly merits that name. Children almost grown up go nearly naked.

Absolutely no furniture is to be seen in the caves. For beds dried leaves are collected and kept in a framework of wood; in some cases even the framework of wood is absent. Old sardine boxes and tins of various kinds, picked up in the roads, serve for kitchen utensils. A well at the foot of the slope supplies them with water.

Among them are several families with from four to five children each. These families have been formed in the place itself, and in some cases between individuals who themselves had grown up in the caverns. It is needless to say that any formality as to marriage, as well as taxes, schooling for the children, etc., are unknown to them. It may be added that so low is the condition of these people that the ground before the caves

which they occupy is covered with their excrement.

A well known philanthropist, Mr. Frédéric Passy, who for some time resided in the neighborhood, endeavored to ameliorate their condition, but with little success.

A case which interested the Academy of Medicine not long ago was the following: A patient died of hydrophobia, and the following day the autopsy-room porter, while removing the pancreas, pricked his finger. Two days later he began the accustomed treatment at the Pasteur Institute, which was continued for eight days, when he felt tired and uneasy, with some lumbar pain. On the following day the temperature was 38° C. Hyperesthesia and a sensation of heaviness in the legs were noted. Later on paresis and formication in the legs, with girdle-pains, developed, and on the third day after the onset of the symptoms urinary disturbances were manifest. Complete paraplegia both as to movement and sensation were present on the fourth day; on the fifth day giddiness and vomiting; on the sixth day the arms were affected and the head could with difficulty be moved. The heart-beats were 140 in number, and breathing was difficult. Notwithstanding these symptoms, it was thought advisable to carry out the usual antirabic treatment.

On the seventh day some improvement in the symptoms was noted; the arms were better, and the legs were no longer without sensation. Improvement continued, and on the twenty-fifth day the patient was able to leave for the country.

At first it had been thought that the patient was suffering from the paralytic form of rabies. This idea, however, was finally decided to be inexact, and the physician who treated the patient considered the case to be one of acute ascending myelitis of toxic origin, due to the injections of spinal-cord preparations acting upon an individual who by his occupation was necessarily chronically infected, and consequently apt to be easily affected by the toxins found in the emulsions used.

In the discussion that followed Dr. Roux stated that he could not agree with the above conclusions. If the symptoms noted had been due to toxins contained in the spinal cord used for the injections, the continuance of these latter would have aggravated the case. This, however, did not occur.

Two similar cases had been observed, according to Dr. Roux, at the Pasteur Institute, both of which had rapidly recovered, and these two cases were the only ones known out of 19,000 cases treated. Dr. Roux thought that if 19,000 persons having either been vaccinated or having taken sea-baths were examined, it would be more than likely that one or two such cases might be found among them. A greater argument was that almost any amount of the emulsion used during the first few days, when the symptoms came on, could be injected into animals without giving rise to any disturbance.

Dr. Laveran had seen a somewhat similar case in a military hospital, ending in recovery, and had come to the conclusion that it was due to an abortive form of rabies, and not to the effect of the injection.

Dr. Brouardel said he considered the case was very likely one of infectious myelitis, but not due to the injections made during the treatment. Such attacks of myelitis were not in reality so very uncommon. It might indeed be a case of paralytic rabies, cured in fact by the continuance of the treatment begun. This would then be a point in favor of the antirabic treatment.

In 1895 M. Dastre, of Paris, while studying the phenomena of coagulation in blood, discovered that the injection of gelatin into the veins of a dog accelerated the process.

Dr. Lancereaux presented recently to the Academy of Medicine a report of a case in which he had endeavored to treat an internal aneurism by the above method. The patient was a male adult, aged forty-six years. For two years he had been suffering from an aneurism of the first portion of the arch of the aorta, which seemed to be in great part due to the efforts required in his occupation of tending a certain piece of machinery, as the first symptoms appeared six months after the patient had taken up the task. These symptoms consisted in neuralgic pains in the upper intercostal nerves on the right, extending into the inner side of the arm. Six months later attacks of angina pectoris appeared, and finally a small tumor appeared on the thorax and gradually increased.

When Dr. Lancereaux first saw the patient the upper and anterior portion of the thorax presented a tumor of the size of a child's head, measuring 12 centimeters vertically and 12½ centimeters transversely. The second, third, and fourth cartilages, the greater part of the sternum, and portions of the second, third, and fourth ribs had disappeared.

The aneurism increased gradually in size, and here and there on its surface were to be

seen dark-colored smaller swellings where the blood was directly brought into contact with the skin.

Inasmuch as the case appeared to be so dangerous, it was decided to inject into the left buttock fifty cubic centimeters of a sterilized one-per-cent. solution of gelatin, at the temperature of 37° C. This caused the temperature of the patient to go up to 38° C., but on the following day the general condition was again normal, and the tumor had become harder. During the next few days the tumor diminished somewhat in size, and the pain which had been felt by the patient completely disappeared. Recurrence of the pains and of the other symptoms were followed by the same results as at first on an injection of 150 cubic centimeters being made. Twelve other injections were made, from two to five days apart. The final result was that the tumor had considerably diminished in size, was firm to the touch, and though pulsation could still be felt in it, it was no longer expansive in character, but seemed rather to be due to the impulse given by the aorta beneath. The patient felt so well that he insisted on leaving the hospital.

A young poet who for some time had been accustomed to use both hashish and morphine, recently committed suicide by means of an overdose of the latter drug. By his will he left the greater part of his fortune, amounting to one hundred and twenty thousand dollars, to his mistress, and one thousand dollars to a member of the legal profession. If, however, his will were attacked by any members of his family on account of supposed undue influence, the entire amount was to go to the latter legatee. As it happened the brother-in-law of the poet endeavored to have the will annulled, not on account of undue influence, but because of the well known abuse of morphine which the deceased had suffered from. The court decided that inasmuch as the abuse of morphine could not be considered as in any way doing away with the culpability of the individual in a criminal case, it could not be regarded as diminishing the responsibility of the individual in a civil cause.

This decision is opposed to the decision given some years ago in a case tried in Hartford, Connecticut, in which a will was annulled on account of the abuse of morphine and alcohol.

France is one of the few countries in which the positions of physicians and surgeons to the hospitals and of assistant professors at the faculties of medicine are filled by competitive examination. Of late years complaints have arisen of favoritism having been shown in the choice made. At the examination for hospital physician which took place this spring, one of the judges, Dr. Variot, published an article in a medical paper, in which he stated that he could see no reason why any such examination should be held, as out of seventy-five candidates the three whom public opinion, previous to the examination, had designated as being especially favored by members of the jury were nominated. This article caused considerable commotion, so much so that one of the medical societies of Paris, which was formed by the reunion of the hospital physicians, held a secret session for the purpose of judging Dr. Variot's conduct in publishing the article.

A still greater excitement has been caused by the resignation of a member of another jury more recently formed, on account, as he said, of the jury having given the highest possible mark to a candidate who had made a mistake in diagnosis, but who was especially protected by other members of the jury.

One of the most illustrious men of French medicine, Duchenne, has but just now had a monument erected to his memory at the Salpêtrière Hospital. The monument consists in a tablet, the upper part of which forms a medallion in which is placed a profile view of the head of Duchenne. Below this medallion is a bas-relief representing Duchenne testing by means of electricity the muscular system of a patient. Representatives of the Faculty of Medicine of Paris and of the various learned societies, as well as of the Government, were present at the inauguration.

Duchenne is so well known that it is hardly worth while to mention his works on "The Application of Localized Electricity to Physiology," etc., and "The Mechanism of Human Physiology." It is chiefly in connection with two affections—locomotor ataxia and progressive muscular atrophy—that his name is connected. Duchenne, who was always called of Boulogne on account of having practised in that city previous to his arrival in Paris, was never connected in any way with the Faculty of Medicine; in fact, during his life he was looked upon by most of those with whom he came into contact in the hospitals as an intruder, if not a quack. Trousseau, it is true, recognized the value of his discoveries.